

INFANTRY RIFLE COMPANY/COMPANY TEAM IN THE DEFENSE, PART II

Subcourse Number IN0754

Edition C

United States Army Infantry School
FORT BENNING, GEORGIA 31905-5593

5 CREDIT HOURS

SUBCOURSE OVERVIEW

This subcourse is designed to teach the basic information on how to conduct an infantry company in the defense. The subcourse covers procedures used to prepare a company/company team defense plan, plan a defense of urbanized terrain, and prepare an operations estimate. Familiarization with the capabilities of combat engineer elements, the procedures to plan and coordinate for passage of lines, develop a company patrolling plan, and conducting the defense of an infantry company.

There are no prerequisites for this subcourse.

This subcourse reflects the doctrine that was current at the time it was prepared. In your own work situation, always refer to the latest publications.

The words "he", "him", "his", and "men", when used in this publication, represent both the masculine and feminine genders unless otherwise stated.

TERMINAL LEARNING OBJECTIVE

Action: Identify how to conduct an infantry company in the defense. Identify the procedures to prepare a company/company team defense plan, plan a defense of urbanized terrain, and prepare an operations estimate. Be familiar with the capabilities of combat engineer elements, and identify the procedures to plan and coordinate for passage of lines, develop a company patrolling plan, and conduct the defense of an infantry company.

Condition: You will be given the subcourse material contained in this subcourse.

Standard: The student will demonstrate his comprehension and knowledge of Subcourse by achieving a minimum of 70 percent on a multiple-choice base examination.

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LESSON 1

PREPARE AND PLAN AN INFANTRY COMPANY DEFENSE

OVERVIEW

Lesson Description:

In this lesson you will learn to prepare and plan an infantry company defense.

Terminal Learning Objective:

- Action: Identify the procedures to prepare a company/company team defense plan, plan a defense of urbanized terrain, and prepare an operations estimate.
- Condition: Given the subcourse material contained in this lesson.
- Standard: The student will demonstrate his comprehension and knowledge by identifying the procedures to prepare a company/company team defense plan, plan a defense of urbanized terrain, and prepare an operations estimate.
- References: The material in this lesson was derived from the following publications:

[FM 71-1.](#)
[FM 7-10.](#)
[FM 90-10.](#)
[FM 90-10-1.](#)
[FM 101-5.](#)
[FM 101-5-1](#)

INTRODUCTION

Defensive operations retain ground, gain time, deny the enemy access to an area, and damage or defeat attacking forces. While they can sometimes deny success to the enemy, they cannot normally ensure victory. At higher levels, even a defensive strategy designed to deny success will require offensive components to preclude defeat. For this reason, military theorists such as Clausewitz, Jomini, and Sun Tzu considered the defense the less decisive form of war, regarding it only as a temporary expedient unless mandated by higher strategic purposes.

While viewing defense as the less decisive form of war, Clausewitz also maintained that it is the stronger one. For one thing, it is easier to deny the enemy his ends than to achieve a positive aim. Moreover, the advantages of cover and concealment, advance siting of weapons, shorter lines of supply, and operations on familiar terrain and among a friendly population generally favor the defense. The only advantage enjoyed by the attacker is the initial choice of when and where to strike. The major challenge of the defense is to overcome this initial offensive advantage.

A successful defense consists of reactive and offensive elements working together to deprive the enemy of the initiative. An effective defense is never purely passive. The defender resists and contains the enemy where he must but seeks every opportunity to go over to the offensive. Early in a campaign or defensive battle, such opportunities will be local and limited. As the situation develops, they will

become more numerous. This is especially true when the defender takes steps to uncover enemy vulnerabilities and to confuse or disorganize his force. When the attacker exposes himself, the defender's reserves or uncommitted forces counterattack. The defense that successfully destroys the coherence of enemy operations can ultimately defeat his uncoordinated forces.

While reactive measures may halt the enemy, early counterattacks improve the chances for success. The defense can greatly damage the enemy only when early counterstrikes accompany the reactive phase of the battle.

PART A - PREPARE A COMPANY/COMPANY TEAM DEFENSE PLAN

1. General.

Due to its limited mobility and firepower, infantry is best employed in rugged or heavily wooded terrain or in built up areas, or behind a major obstacle such as a river or swamp.

2. Area Defense.

Once in position, the infantry is relatively fixed and only minor movements are planned. This is the area defense. The intent of the area defense is to hold occupied terrain. The deployment of the rifle company varies according to the mission, enemy, terrain and weather, and troops and time available (METT-T), as well as the amount and type of combat support available.

The rifle company normally defends as part of a battalion to deny an area to the enemy, protect flanks, or disorganize and destroy the enemy. The company defends by stopping the enemy by fire forward of the company position or by repelling him if he reaches that position.

The battalion commander assigns the rifle company a sector or battle position (BP) which is part of the battalion sector or BP. To some degree, he controls the way the company deploys by prescribing the size of its sector/BP and the terrain it will defend. If he thinks the company needs more firepower to defend its sector/BP, the battalion commander may attach some National Guard or Reserve combat support elements to it. If the battalion has tanks assigned, the battalion commander may put a platoon of tanks under the operational control (OPCON) of the company. He may give the company priority of battalion mortar or artillery fire including final protective fire. An engineer squad or platoon may also be in support or under OPCON of the company to help it construct obstacles and positions.

Operational control is a relationship which places a unit under a commander for assignment of tasks, designation of objectives, composition of subordinate units, and authoritative direction to accomplish a mission. OPCON does not imply responsibility or authority for administration, combat service support, discipline, internal organization, or training. The commander's relationship with OPCON units is otherwise the same with organic or attached subordinate units.

If the company is to be in reserve, the battalion commander designates its primary position and, possibly, a supplementary position.

You consider METT-T when selecting platoon and weapon positions and deciding the allocation of combat power. You attain depth and an all-round defense by assigning platoons and weapons primary, alternate, and supplementary positions.

You must know how to employ your company and also how the battalion defends. You must know the capabilities of the combat support units that may help your company defend.

3. Mobile Defense.

The mobile defense, used by mechanized and armor units, is designed to fight against a highly mobile force. Its intent is to wear down the attacker by confronting him continuously with combined-arms teams and task forces from mutually supporting battle positions in depth.

Infantry can contribute to a mobile defense by:

- defending in urban terrain (cities and towns);
- defending in armor-restrictive terrain;
- defending a riverline;
- defending a strongpoint in conjunction with armor and mechanized units;
- securing a rear area; and
- patrolling, infiltrating, and conducting limited airmobile operations.

4. Characteristics of Defense.

At company level, the planning, preparation, and conduct of the defense are based on the characteristics listed below.

- **Understand the Enemy.** You must be thoroughly familiar with the capabilities and limitations of the enemy. You must know the organization of enemy units and how they are deployed in the attack. You must also be aware of the capabilities of enemy weapons and equipment and how they are used.
- **See the Battlefield.** Prior to the battle, you must try to acquire, develop, and disseminate all possible information on the enemy's location, organization, and strength. You position yourself where you can observe the battlefield. Once the battle starts, you must have a continuous flow of information on enemy activities to augment your personal observations in order to make timely and accurate decisions. You must deny the enemy similar information with operations security efforts.
- **Concentrate Combat Power at Critical Times and Places.** The first means of concentrating combat power is through the use of artillery and mortar fire. These assets can be quickly shifted to critical points to delay, disrupt, or destroy an enemy attack and then be shifted again to concentrate against other threats. Concentrating fire of infantry weapons, because of their limited range, requires positioning sufficient units and weapons before the battle. Other direct fire weapons such as tube-launched, optically tracked, wire-guided (TOW) missiles and tanks can more easily concentrate their fire. TOWs, because of their accuracy at extended ranges,

concentrate fire primarily through assignment of primary and secondary sectors of fire. Tanks, because of their mobility and protection, more often reposition to concentrate fire.

The second means of concentrating combat power is to reposition units to occupy alternate or supplementary positions in depth in the path of the enemy attack. Reserves may be positioned near critical terrain or likely enemy avenues of attack. Blocking positions, alternate positions, or even strong points may be established to deny the enemy the chance for a rapid breakthrough. If armored units are available, they can be used to concentrate forces or counterattack at critical times and places. Counterattacks by dismounted infantry against armored forces are very difficult. However, certain conditions provide dismounted infantry a distinct advantage over the enemy before being detected. Infantry counterattacks against dismounted infantry can and should be conducted whenever necessary to maintain the integrity of the defense and to defeat the attacker.

- **Exploit the Advantages of the Defender.** When given time, you have a number of advantages which allow you to defeat an attacking force much larger than your own. You analyze the terrain in detail and become intimately familiar with features that increase your chance of success. The attacker must feel his way over the terrain, seeing the area for the first time. You have your company prepare positions, construct obstacles, and conceal its efforts in advance. The attacker must guess where the defender is located. You initiate the fight from prepared, stationary positions which are difficult to detect and which provide cover from enemy fire. The attacker must react to the defender and either fire while moving or lose momentum by seeking covered positions. You develop flexible plans for control of fire, movement, communication, and logistics to fit any predictable situation.
- **Fight as a Combined Arms Team.** Field artillery, engineers, infantry, air defense artillery, tanks, tactical aircraft, and attack/assault helicopters can all contribute to mission success. You integrate available assets so that their combined effect on the enemy is far greater than their individual effects. Each asset, in given circumstances, can be the arm most critical to the defense. In very rugged terrain, infantry locates targets so that massive firepower can destroy them.

With assault helicopters, infantry may be capable of moving to block enemy attacks over much larger areas. In more open terrain, artillery-delivered mines and engineer-prepared obstacles may be used to slow enemy armor. Tactical aircraft and antitank weapons then become the key systems. You must ensure that each member arm is integrated so that the strengths of each are maximized and their vulnerabilities minimized.

In addition to the fundamentals of defense, you must consider the following when planning your defense:

- **All-Round Defense.** Although a defense usually is prepared to repel an attack from one general direction, your company must be ready to defend against a ground attack from any direction. You do this to some extent by having supplementary positions, tying-in with adjacent units, posting observation posts (OPs), and conducting patrols. You are always prepared for an air

attack. Air defense consists of both active measures; use of surface-to-air missile and small arms fire, and passive measures; concealment from air observation.

- **Defense in Depth.** Your company attains depth by the positioning of its units and weapons. This is done to keep the attacker from easily flanking the defense or exploiting a penetration. When antiarmor weapons are positioned in depth, they are less likely to be suppressed simultaneously.
- **Mutual Support.** Units and weapons are positioned so that their sectors of fire overlap, and so they can fire at enemy troops attacking adjacent weapons and units.
- **Security.** The defender takes all steps necessary to preclude surprise. As the attacker has the initiative to pick the time, place, and direction of the attack, the defender posts security for warning. Security measures include OPs, STANO (surveillance, target acquisition, and night observation), ground sensor devices, mines, boobytraps, and patrols. Your company may deploy security elements to its front, flanks, and rear. Security should be strong around-the-clock and in all weather conditions.
- **Maximize Effectiveness of Key Weapons.** You must organize your defense around weapons most effective against the attacker. When facing a major armor force, the allocation and positioning of antitank weapons (for example, TOW missiles, Dragon missiles, mines, and tanks) are the chief means of defense while other assets serve to supplement them and compensate for their vulnerabilities. Against an enemy infantry threat, infantry defeating weapons (for example, machineguns, mortars, artillery, and small arms) and antipersonnel obstacles (such as wire and mines) are integrated to create a barrier to stop the enemy and destroy him forward of defensive positions. Antitank weapons strengthen this barrier. The effectiveness of all defense weapons is increased when they are concealed so as to escape enemy suppressive fire.
- **Use Obstacles to Strengthen Positions and Complement Fire.** Obstacles are positioned to stop or canalize the enemy. Natural obstacles can be reinforced by; manmade obstacles such as minefields, abatis, road craters, ditches, and tactical wire. Large obstacles are normally planned by higher commands, but your company may be required to help the engineers build them.
- **Use Antiarmor Weapons to Kill Armor.** In the defense, it is desirable to kill enemy armor well forward of your company's position. Though the company is relatively fixed, battalion TOWs are mobile. They may first fire at enemy tanks from positions forward of the company's position and then move to positions with long fields of fire well behind the forward rifle platoons. This adds depth to the defense and exploits the TOW's range advantage over tank guns. Dragons are positioned within the platoon positions to engage targets from short to medium ranges. Light antitank weapons (AT-4s) are used to engage targets at short ranges.
- **Maximum Use of Offensive Action.** Your commander must be alert to gain the initiative by offensive action. Aggressive patrolling helps keep up the offensive momentum and help you see the battlefield. Counterattacks are normally conducted by battalion or brigade, but your company may use its reserve to conduct a small scale counterattack. Your company may also use its reserve to block a penetration until the battalion's counterattack is launched.

5. Organization of the Battlefield.

In defensive operations, the battlefield has three areas:

- covering force area.
 - Main battle area.
 - Rear area.
- **Covering Force Area.** This starts at the forward edge of the battle area (FEBA) and extends as far forward as the covering force is operating. The covering force is deployed by the division or brigade and may be 10 to 15 kilometers forward of the FEBA. Covering force units are usually mechanized infantry, armor, and artillery units. Covering force missions may be one or more of the following: provide early warning to units in the main battle area (MBA), strip away the enemy's reconnaissance units, force him to deploy, repel his hasty attacks, and find where he plans to launch his main attack. This force also tries to deceive the enemy as to the location of the FEBA. This gives units in the MBA more time to prepare.
 - **Main Battle Area.** This is where the defending units intend to stop the enemy advance. It begins at the FEBA and extends to the rear boundaries of the forward brigades. It may be divided into brigade, battalion, and company sectors/BPs, or a combination of these. The width and depth of each sector/BP depends on METT-T. The most likely enemy avenues of approach into the MBA will have a high density of defending units which exploit the defensive aspects of the terrain and mass combat power to repel an attack. A forward rifle company normally occupies restrictive terrain along the FEBA. How it is deployed depends on the width of its sector/BP and METT-T. The depth of a forward rifle company's position is derived from the positioning of platoons and weapons in primary, alternate, and supplementary positions.
 - **Rear Area.** This is behind the brigade rear boundary and is controlled by the division. Division command and support units are there. Battalions and companies (kept as division reserve) may also be there. A rifle company may have a security mission in the rear area.

6. How Threat Units Attack.

Threat infantry units and Threat motorized rifle (MR) units use the offense as the preferred form of combat. The doctrine of both Threat units states that decisive results can only be achieved through offensive operations.

Motorized Rifle Units. Threat motorized rifle units fight as a part of a combined arms team. They concentrate strength and firepower and combine frontal attacks with envelopments, and pursue to defeat an opponent. They intend to advance 30 to 50 kilometers a day in a conventional war, and up to 100 kilometers a day in a nuclear war.

In the offense, they deploy in two echelons, each with a specific mission. The mission of the first echelon is to rupture and penetrate the defense. The mission of the second echelon is to maintain the momentum of the attack. Each command level has a small reserve. Through echelonment, they plan to conduct continuous operations around the clock in all weather.

- **Meeting Engagement.** In a meeting engagement, two forces meet unexpectedly. Both forces start the fight with little or no warning. Threat units teach that the leader who takes the initiative wins this type of fight. A Threat battalion starts a meeting engagement from a march column. When the column meets an opponent's moving force or encounters a prepared defense, the lead elements of the column fight the force to destroy it. If the lead elements cannot defeat the force, the lead elements try to hold the force in place. The rest of the column then makes a hasty attack against a flank to try to surround or bypass the force.
- **Attack of a Defending Enemy.** In an attack of a defending enemy, Threat forces attack to destroy their opponent rather than to seize terrain.

The attack normally starts with a 30- to 35-minute artillery preparation. The attacking battalions in the Threat's first echelon deploy as close to the opponent's defensive positions as the terrain permits. Each battalion deploys in two echelons. Two companies are in the first echelon, and one company is in the second (Figure 1-1).

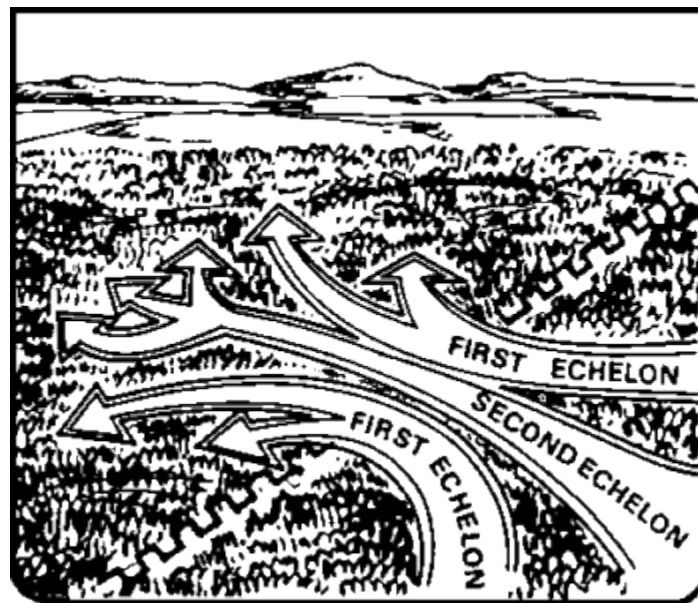


Figure 1-1. Attack of a Defending Enemy.

Attacking units closely follow impacting artillery fire to exploit its effects. They plan to close on the opponent's defense immediately after the completion of the artillery preparation. Tanks, when present, lead the infantry.

The mission of a first echelon battalion is to find and penetrate a weak point in the defense, secure the shoulders of the penetration, and permit the passage of the second echelon battalions. The mission of the second echelon battalions is to drive deep into the rear to disrupt the opponent's defense.

Attacking troops stay mounted as long as they can, preferably throughout the attack. Troops fire from firing ports in their carriers as they sweep over the objective. If they come under anti-armor fire, they dismount 400 to 800 meters short of the defender's positions and assault on foot while the vehicles support by fire from hull-down positions until the objective is taken. The last

100 meters are covered at a run to exploit the shock of supporting fire. Hand-to-hand combat is used when necessary to take the objective.

- **Pursuit.** A Threat pursuit seeks to complete the destruction of a retreating opponent. The Threat may pursue directly following a retreating unit, on a parallel route, or by using a combination of those two methods. They try to move faster than the retreating unit to ambush and destroy it. Airborne and airlanded troops may block on critical terrain ([Figure 1-2](#)).

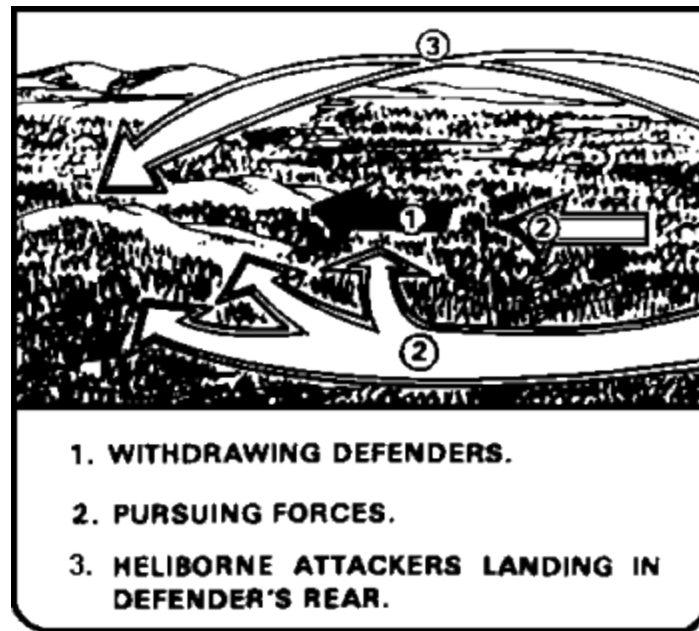


Figure 1-2. The Pursuit.

Infantry Units. Threat infantry attacks in unlikely sectors and over rugged terrain to hinder the opponent's mobility and firepower. Threat infantry is trained and equipped to advance on unlikely approaches, infiltrate deep into its opponent's defense, and block its opponent's retreat or reinforcement. If the attack is stopped, Threat infantry will probe aggressively to find another route to its objective. Smoke, indirect fire, and deception are used to support the attack.

To exploit their firepower, Threat infantry applies the principles of mobility, surprise, mass, speed, and security. They consider infiltration and envelopment as the best forms of offensive maneuver. The objective of their attacks, which are normally conducted during limited visibility, is the destruction of the opponent's force, not the seizure of terrain.

The regiment is the basic maneuver element of Threat infantry units. It normally attacks in two echelons with a company in reserve. The attacking battalions deploy in one of four basic formations. They may deploy with three companies on line, two companies up with one back, one company up and two back, or a rough square (described as an S or Z formation) with a company in three of the corners and a reserve platoon in the fourth corner.

Threat infantry moves to its attack positions during periods of limited visibility. Prior to the main attack, small squad size units infiltrate the defense in order to disrupt and destroy lines of communications, command posts, weapons positions, supply points, and routes of withdrawal

and/or reinforcement. Obstacle clearing teams are also sent forward to clear any obstacles along the route to the objective. Once these units have completed their missions, the main force attacks using aggressive fire and maneuver.

7. Control Measures.

Commanders use graphic control measures together with oral orders to prescribe how the defense is to be conducted ([Figure 1-3](#)).

- **Battle Position (BP).** This is a position on which a unit defends. A unit assigned a BP is located within the general outline of the BP. After coordination with battalion, some security elements may operate outside the BP for early warning.
- **Sector.** This is a defensive area designated by boundaries within which a unit operates and for which it is responsible. Companies and higher may be assigned sectors but platoons normally are given BPs.

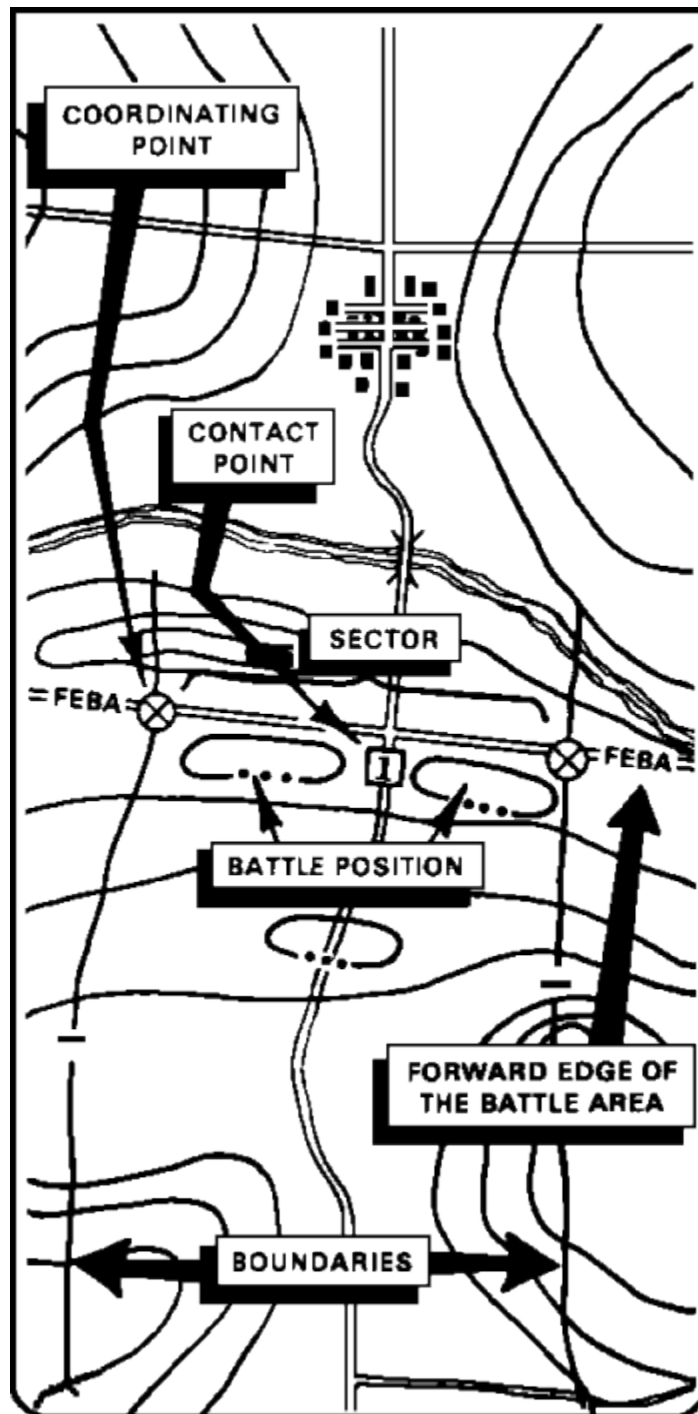


Figure 1-3. Control Measures.

- **Boundaries.** These are used to delineate areas of responsibility of companies and higher commands. Platoons are not normally assigned boundaries. A unit may cross a boundary after coordinating with the adjacent unit. Units may not fire indirect fire across boundaries without approval of the unit on the other side of the boundary. They may fire direct fire across boundaries at clearly identified enemy targets.

- **Coordinating Points.** These are places on boundaries which serve two purposes. They indicate the general trace of the FEBA, and they indicate the places where adjacent commanders coordinate fire and maneuver to tie-in the defense for mutual support.
- **Forward Edge of the Battle Area (FEBA).** This is the foremost limit of the MBA along which defending ground combat units (excluding the battalion's security force) are deployed.
- **Contact Point.** This is a place on the ground where two or more units must make physical contact.
- **Target Reference Point (TRP).** This is an early recognized point used for identifying targets or for outlining engagement areas or sectors of fire for direct fire weapons ([Figure 1-4](#)). Once designated, TRPs also constitute planned indirect fire targets. A TRP is identified by two letters and four numbers in the same manner as indirect fire targets. Once TRPs are designated within a battalion or company, units may use only the last two or three numbers to refer to the TRPS.

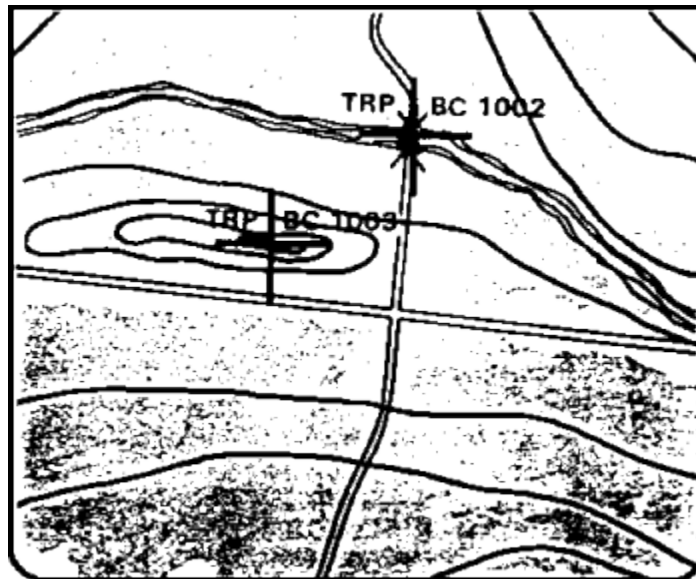


Figure 1-4. Target Reference Point.

- **Sector of Fire.** This is an area, limited by boundaries, that a unit or a weapon must cover with observation and fire ([Figure 1-5](#)).

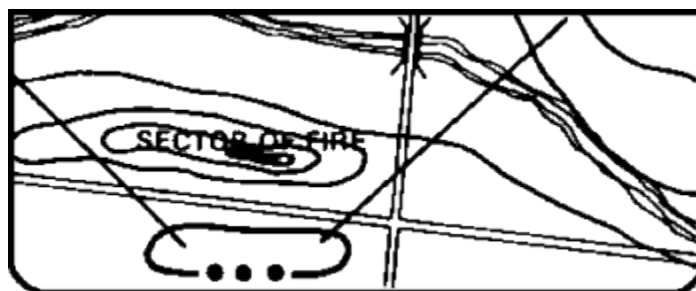


Figure 1-5. Sector of Fire.

8. Company Dispositions.

Before deciding how to deploy your company in the defense, you consider METT-T. You then position your platoons and weapons, either linearly or in depth, to optimize their capabilities against the primary threat. Reliance is placed on a carefully positioned, well-prepared, relatively fixed defense. This takes time-time to study the terrain and to make the extensive preparation required to survive and succeed against all enemy efforts.

Regardless of the disposition of units and weapons, the company defense must include:

- Dug-in fighting positions.
- All-round security.
- Protective mines and other obstacles.
- Mutually supporting positions.
- Covered and concealed routes of resupply and withdrawal.
- Extensive patrolling during periods of limited visibility to preclude infiltration.

9. Types of Dispositions.

There are two basic dispositions for the rifle company. They are: linear disposition and disposition in depth.

- **Linear Disposition.** This disposition allows interlocking and overlapping observation and fields of fire along the company sector. The bulk of the company's combat power is well forward. You rely on fighting from well-arranged and well-prepared fighting positions. You plan to use a high volume of direct and indirect fire to stop the attacker. The reserve is usually small, perhaps a squad.

Minefields and other obstacles are positioned and covered by fire to slow and inflict casualties on the attacker. He is engaged, initially, at long ranges by violent supporting fires (tactical air, attack helicopters, and field artillery) to disrupt the momentum of his attack. Subsequent fire from mortars, machineguns, and small arms engage him as he comes into range. Should the defense be penetrated, the enemy advance must be blocked by the reserve. Counterattacks are then conducted (either by the company reserve or battalion reserve) by intense fires and minimum essential maneuver to destroy isolated or weakened enemy forces and regain vital terrain.

A linear disposition may be used when:

- the enemy is primarily infantry, or natural or manmade obstacles neutralize the mobility of mounted units and force the enemy to attack dismounted;
- specific terrain along the FEBA must be retained;
- sufficient resources are available to provide adequate density of combat power across the sector to detect and stop an infantry attack; or

- defensible terrain is available in the forward portion of the company's sector.

A modification of the linear disposition is the linear disposition with depth ([Figure 1-6](#)). It allows interlocking and overlapping observation and fields of fire, which also allows a large reserve and depth in the defense. A linear disposition with depth may be used when:

- the enemy is both infantry and armor, or
- there is an armor avenue of approach through the company sector.

● **Disposition in Depth.** This disposition contains a series of mutually-supporting anti-armor BPs on armor-restrictive terrain, protected by infantry, and strengthened by obstacles. The closer the forward positions can take on linear characteristics the better, since infiltration by dismounted infantry is a threat. Positions are arrayed in depth, and units remain in place except for local or internal movement to alternate or supplementary positions. If certain positions become untenable during the battle, you withdraw from them according to previously prepared plans. The depth of the defense is derived from the initial positioning of the platoons and weapons-not from maneuver ([Figure 1-7](#)).

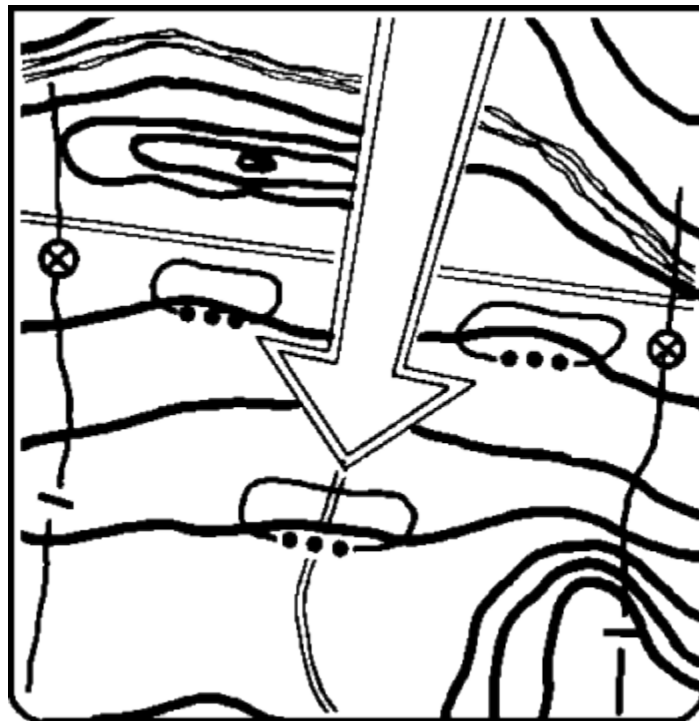


Figure 1-6. Linear Disposition with Depth.

This disposition is stronger against armor but somewhat vulnerable to infantry attacks or combined arms action directed against one position at a time. Therefore, in the preparation of the BPs, emphasis is on all-round security and mutual support.

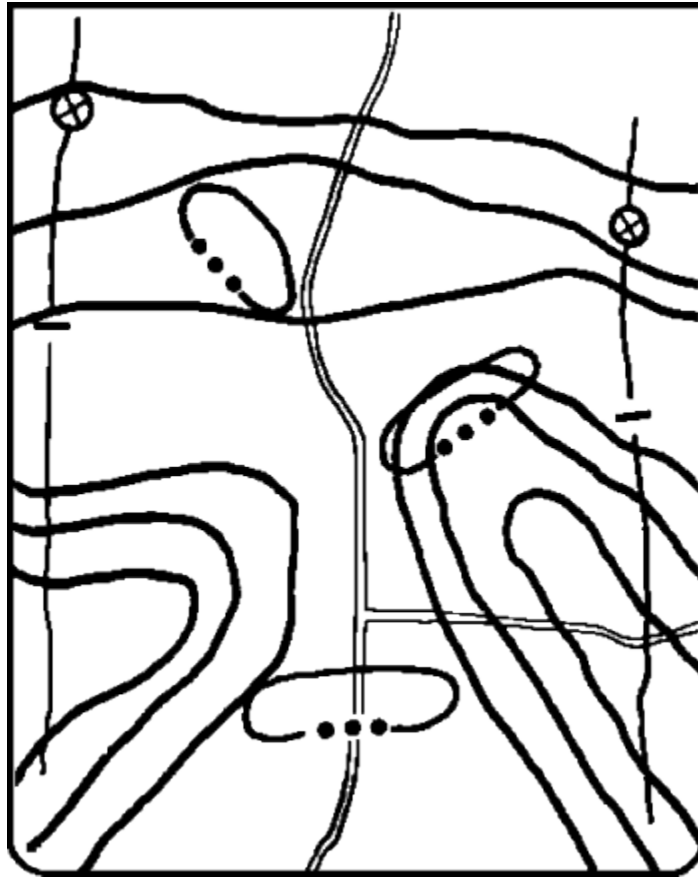


Figure 1-7. Disposition in Depth.

When deploying in depth, the intent is to defeat the mounted attacker as far forward as possible, confronting him simultaneously with effective anti-armor fires from multiple BPs as he attempts to maneuver around them. Mines, other obstacles, infantry positions, and patrols cover gaps which, because of terrain masking or heavy woods, cannot be covered effectively by fire. The attacker is engaged at long ranges with fires from tactical aircraft, attack helicopters, field artillery, and mortars, then by organic anti-armor weapons positioned to deliver fires at maximum ranges from multiple directions. As the enemy closes, anti-armor weapons may move to alternate and supplementary firing positions within the BP to continue firing and avoid being bypassed. Fields of fire are cleared to fully exploit the range of all anti-armor weapons.

A disposition in depth may be used when:

- the enemy is highly mobile;
- armor-restrictive terrain is available or terrain can be made armor restrictive for unit positions; or
- the terrain throughout the sector allows direct fire engagement of both mounted and dismounted attackers.

10. Preparation for the Defense.

On receipt of a battalion defense order, you start your troop leading procedure and make an estimate of the situation. Your estimate is a consideration of METT-T. This consideration of METT-T helps you determine how to employ your platoons and weapons, and how to support them with indirect fire.

You consider your mission relative to what your unit is supposed to do. You must be sure you understand all stated and implied tasks for your company.

You consider the type enemy (infantry, motorized infantry, armored) you will fight. This has an impact on how you will deploy your platoons and weapons.

You consider the type terrain on which you will be fighting and also the weather conditions under which you will be fighting. When considering the terrain, you analyze it for observation and fields of fire, cover and concealment, obstacles, key terrain, and likely enemy avenues of approach. You consider the weather and how it will affect soldiers, equipment, visibility, and trafficability.

You consider the troops you have available to defend your position and also the time you have for preparing the defense.

11. Defense Plan.

After receiving the mission to defend, and after considering METT-T, you develop a defense plan. This plan includes:

- Employment of the forward platoons.
- Employment of the reserve (if used).
- Employment of anti-armor weapons and tanks.
- Employment of company mortars.
- Use of other indirect fire.
- Use of mines and obstacles.
- Security measures.
- Combat service support.
- Selection of a CP and/or an OP.
- Priority of work.

Employment of the Forward Platoons. You assign each platoon a primary position to defend and a sector of fire ([Figure 1-8](#)). Each position must:

- meet the company's requirement to stop the enemy forward of the company's position;
- tie-in with and provide mutual support to adjacent units;
- concentrate fire on the enemy and block avenues of approach;
- have good fields of fire;

- have cover and concealment; and
- allow dispersion both laterally and in depth.

The following is a guide for positioning platoons:

- On ideal terrain, a full strength platoon can occupy a position about 400 meters wide. They can also control by observation and fire, a sector about 750 meters wide (with good fields of fire) out to about 400 meters (rifle range). Its position may be as much as 200 meters deep.

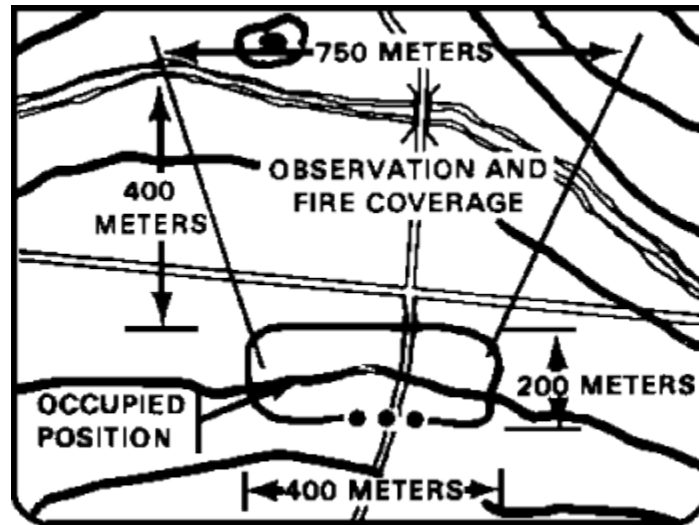


Figure 1-8. Platoon Position.

You may also assign alternate and/or supplementary positions to your platoons. Depending on the time available and the situation, both alternate and supplementary positions may not be assigned.

An alternate position is a position to the front, flank, or slightly to the rear, of the primary position. It must let the platoon cover the same sector of fire as the primary position. It may be a position forward of the primary position, with less concealment, to be occupied when visibility is poor. It may be to the rear or flank of the primary position and occupied if the platoon is driven out of the primary position by enemy fire or assault.

A supplementary position is to the flank or rear of the primary position and lets the platoon defend against an attack on an avenue of approach not covered by the primary position. A supplementary position may be assigned when the platoon covers more than one avenue of approach.

A platoon moves from its primary, alternate, or supplementary position only with your approval or when a condition exists that you have prescribed as a reason to move.

Each platoon leader prepares and provides you with a platoon sector sketch. These sketches help you determine whether or not the company sector is adequately covered. These sketches do not, however, reduce the need for you to physically inspect your company's defense.

Employment of the Reserve. If your company has a reserve, it may be positioned in the rear of the forward platoons to add depth to the defense. The reserve may be a platoon, or one or two squads. You give the reserve a primary position and one or more supplementary positions. The primary position is

on the most likely enemy avenue of approach. The supplementary positions are on other, less likely avenues of approach. It may move from one position to another as required. Your reserve may have one or more of the following missions, generally assigned in a priority:

- **Block a penetration.** The reserve blocks an enemy penetration by fire ([Figure 1-9](#)). The forward platoons help by firing across the neck and flanks of the penetration. They continue to hold their flanks. When the reserve is blocking a penetration, a counterattack to eject the penetrating force is usually made by the battalion reserve. Indirect fire helps to contain and reduce the penetration.

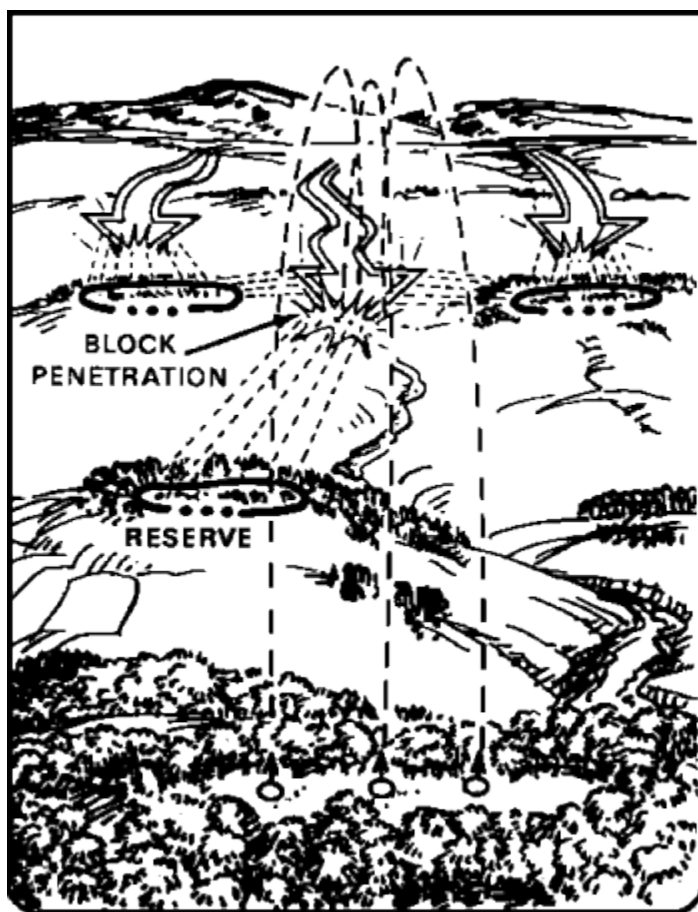


Figure 1-9. Block a Penetration.

- **Secure the company flanks and rear.** The reserve prepares supplementary positions to secure the company flanks and rear. You direct which approaches to secure. The reserve's position must tie-in with the supplementary positions of the forward platoons and with adjacent units. The reserve may have to occupy a supplementary position to secure a flank when the sector of an adjacent company has been penetrated.
- **Support a forward platoon by fire.** For this mission, the reserve is positioned where it can fire into unoccupied areas between forward platoons and on their flanks and rear ([Figure 1-10](#)). The reserve's position must be close enough to the forward platoon's primary position so that it can hit enemy troops that penetrate that position. The reserve is normally kept intact and is moved by you as the situation dictates.



Figure 1-10. Support a Forward Platoon.

- **OPs and security patrols.** You prescribe what security and surveillance responsibilities the reserve will have. These may require the use of guards, OPS, and security patrols ([Figure 1-11](#)). The reserve may have nuclear, biological, and chemical (NBC) detection devices, night vision devices, trip flares, antipersonnel mines, and noisemaking device for early warning. The reserve may help secure the company CP, mortar section, and crews of supporting weapons in the company sector. They watch avenues of approach and key terrain. Security patrols reconnoiter those areas which cannot be seen by other means and keep contact with adjacent units. They can also be a means of communications between OPs.
- **Counterattack.** The objective of a counterattack is normally to destroy an enemy that has penetrated the defense or to eject him from the penetration. You plan for a counterattack on one or more likely penetrations. Each is a complete attack plan. Each has a tentative objective and a direction of attack. A plan may have a line of departure (LD), a route to the LD, and an attack position. With time, each counterattack plan is rehearsed. At least, a dry run or walk through of the attack is done. This helps inform the forward platoons of the plans. The reserve conducts its other tasks until the counterattack order is given by the commander. They must then attack with speed and fury and be given priority of supporting fire.

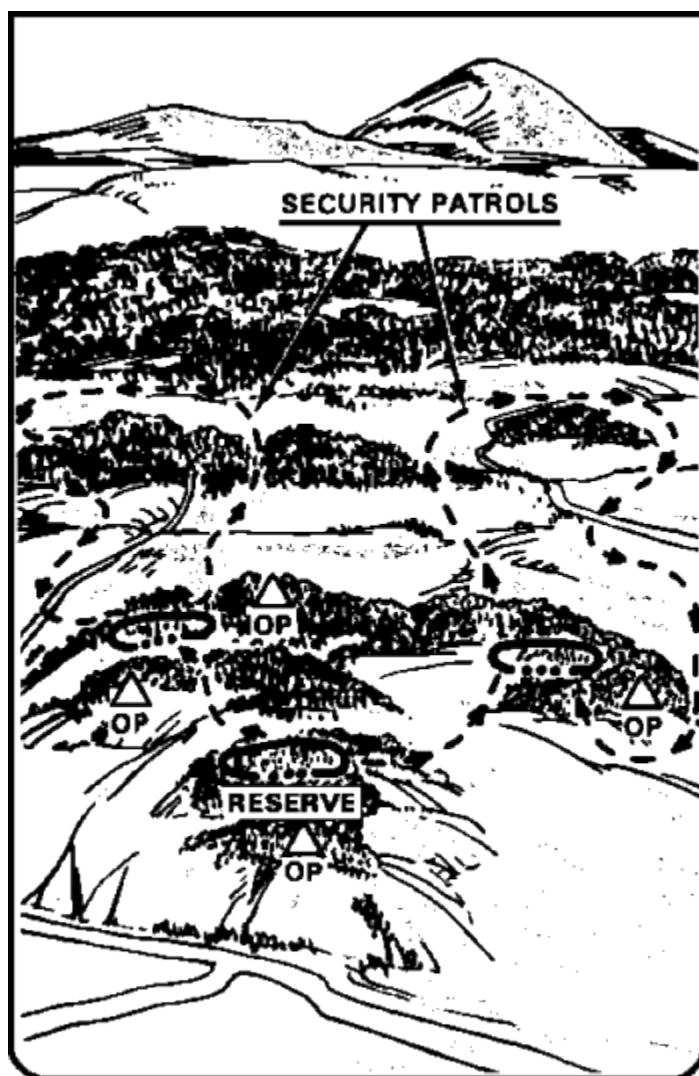


Figure 1-11. OPs and Security Patrols.

Employment of Dragons. Company commanders normally assign positions and sectors of fire or engagement areas to Dragons. However, you may direct the general position and sectors of fire or engagement areas of any Dragons covering key areas. You may, for example, tell an anti-armor section sergeant to position his Dragons on the flank of a platoon position to tie-in with the company's TOWs, or those of an adjacent unit, to insure an area is covered.

Regardless of who assigns the positions and sectors of fire, you check and adjust weapon positions to be sure that there are no gaps and that units and weapons have mutual support. You may also do this with machine guns.

Employment of TOWs Attached or OPCON. These are deployed by section (two TOWs). You or the TOW platoon leader assign them general support positions. You also assign them primary and secondary sectors of fire or engagement areas. There should be at least a 300-meter separation between TOWs so that no two weapons can be suppressed by the same enemy fire. Positions should allow for mutual support between TOWs, and between TOWs and other anti-tank weapons. Some security is gained for TOWs by having them near or behind rifle units.

Some TOWs may be positioned temporarily near or forward of the FEBA to have early, long-range shots at enemy vehicles. As the enemy closes on them, the TOWs move to positions to the rear or on the flanks.

If one or more of the battalion TOW sections are attached to the company, the TOW platoon leader must concentrate his efforts on controlling the TOWs. Consequently, the company anti-armor section sergeant or the mortar section sergeant controls their weapon systems.

Employment of Tanks. A tank platoon may be under the operational control (OPCON) of your rifle company. Teamed with infantry and with artillery support, tanks have an excellent counterattack capability. They may be repositioned quickly, even when under fire.

There are two basic ways for a defending rifle company to employ tanks. In both, you pick their general positions and sectors of fire. You are helped and advised in this by the tank platoon leader who picks the tanks' exact positions and controls their fire and movement.

The first way is to integrate the tanks throughout the company position, both laterally and in depth, to cover armor avenues of approach ([Figure 1-12](#)). This may be done when there are only a few good firing positions or when the terrain restricts fast tank movement. Each tank should have mutual support with at least one other tank. Mutual support should also be arranged among tanks, TOWs, and Dragons. This employment of tanks allows coverage of the company sector. It makes it easier for tanks to hit the enemy with flanking fire from different directions and makes it hard for the enemy to suppress all the tanks at one time. The tanks remain under the control of the tank platoon leader.

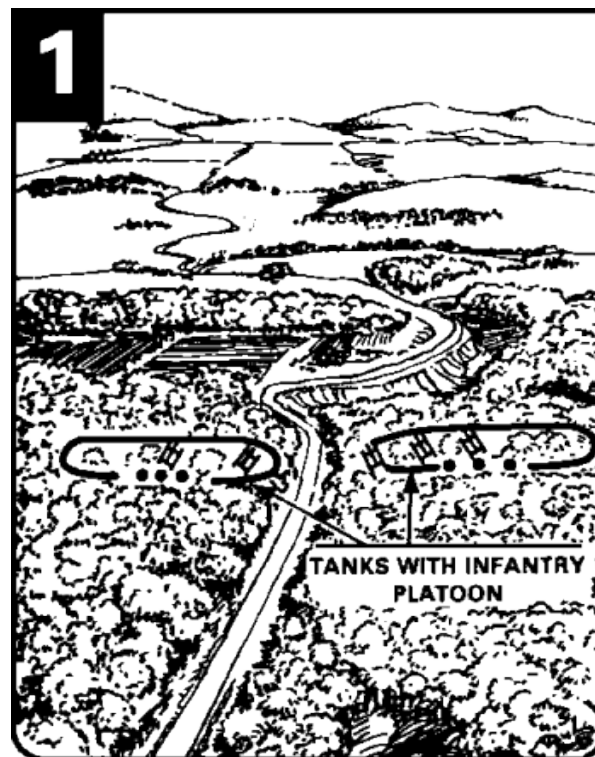


Figure 1-12. Employment of Tanks.

The second way to employ tanks is to hold them in reserve in a position behind the forward infantry platoons ([Figure 1-13](#)). This may be done when there are several armor avenues of approach into the company sector. There must, however, be sufficient tank firing positions and routes to them. When targets appear, the tanks move to forward or flank firing positions. This allows quick concentration of the tanks at a critical point to repel an attack. It makes controls of the tank platoon easier and does not subject other troops to enemy fire directed at the tanks.

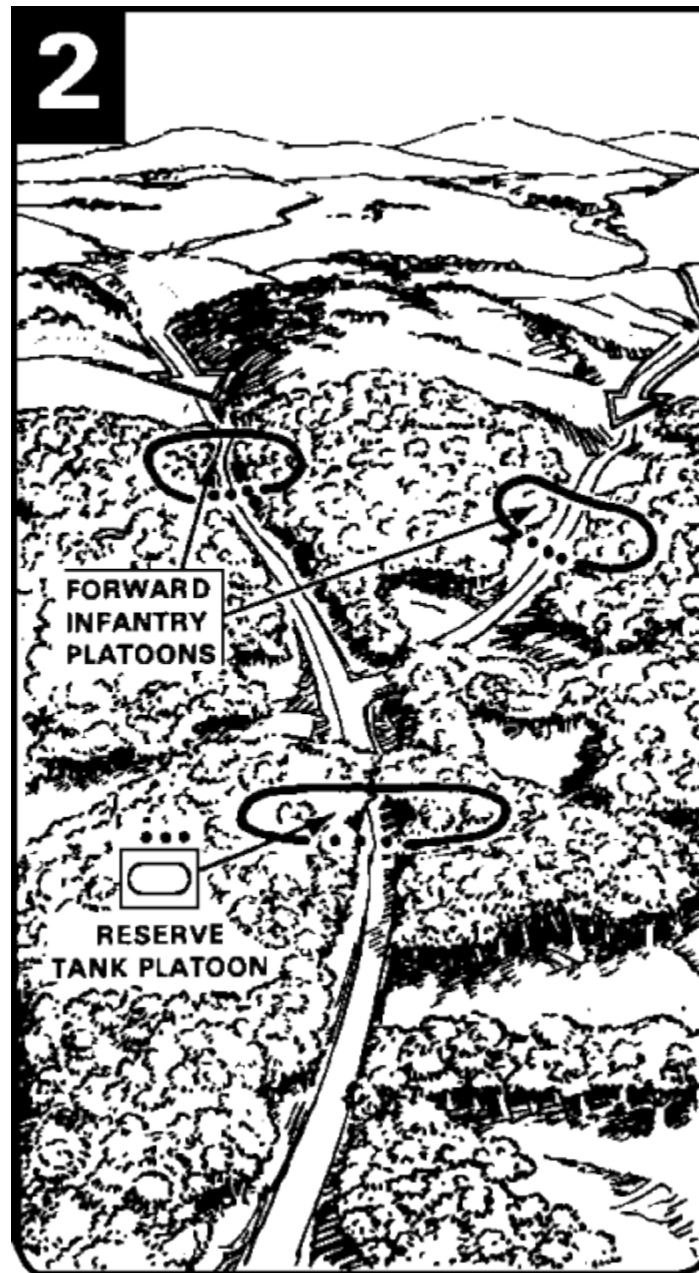


Figure 1-13. Employment of Tanks.

Employment of Company Mortars. Your company mortar section is positioned (if feasible) where it can fire into all or most of the company's sector. It should be far enough to the rear so that the mortar's minimum range does not keep it from hitting targets within the company sector/BP. This allows the mortars to help stop an enemy that has penetrated the defense or help

support a counterattack. A rule of thumb for positioning mortars is to have one-half to two-thirds of their range forward of the company position. However, the distance at which the company is capable of observing and identifying targets must be considered. Firing positions should be in defilade and concealed. Alternate firing positions are planned since it may be necessary to move due to enemy counterfire.

Use of Indirect Fire. You and your fire support team (FIST) chief plan indirect fire targets as far forward as the forward observers (FO) can see. You plan targets on all likely enemy approaches and on areas the enemy may use in the attack, such as OPs, overwatch positions, assembly areas, assault positions, and defiles. Targets are also planned on and near friendly positions to stop likely penetrations or to support a counterattack.

You and the FIST chief plan the exact locations for any final protective fire (FPF). FPF is a barrier of fire planned on the most dangerous enemy avenue of approach to provide immediate close-in protection for defending troops during an enemy assault. It is planned as close as possible to friendly troops without endangering them. Once FPF is called for, it is fired continuously until you order it stopped. The company has FPF from its mortar section, and may have FPFs from the battalion mortars and/or supporting artillery.

A list of the indirect fire targets (target list) planned by you and the FIST chief is sent to the battalion fire support officer (FSO) for approval. Once the target list is approved, the FSO assigns a target number to each target and returns the list to you or the FIST chief. The target list is then distributed to the platoon leaders or their FO.

During the defense, your company may be supported by the company mortars, the battalion mortars, or any of the artillery units supporting the battalion.

Use of Mines. Both anti-tank and antipersonnel mines are used to complement obstacles and indirect fire. The family of scatterable mines (FASCAM) may be delivered by artillery or aircraft. If the sector is wide and the enemy can attack on a number of approaches, scatterable mine targets are planned on each approach. When the enemy attacks, the artillery fires the scatterable mines on the approaches the enemy is using. In addition, you can direct your FOs to adjust artillery scatterable mines on an enemy formation while it is stopped by an obstacle. This can break up his formations and cause heavy casualties.

Use of Obstacles. Your company uses mines, barbed wire, and other obstacles to cause enemy casualties and to canalize and slow the enemy to increase his exposure to defensive fire. A combination of antipersonnel and anti-tank obstacles should be used to canalize, delay, restrict or divert the enemy's attack.

For best results, obstacles are employed in depth. Existing obstacles should be reinforced to increase their effectiveness. All obstacles must be observed and covered by fire. That makes them more difficult to bypass or breach.

Security Measures. You establish a security system for your company to keep the enemy from observing or surprising the company. You base this system on orders received from the

battalion, the enemy situation, the terrain, and visibility conditions. The system provides for both active and passive measures.

Active security measures include such things as OPs, stand-to, and patrols. You may require each platoon to have a set number of OPs. If you do not, the platoon leaders decide what they need. There should be at least one OP per platoon. In close terrain or during period of limited visibility, there may be one per squad.

You may also require a set number of men to be on security at all times. The number will vary with the enemy situation, terrain, and visibility. As a guide, at least one-third of the troops should be on security at all times.

When an attack is expected, your entire company should be on security. This degree of security should not be maintained for extended periods. You must keep in mind that your men need rest in order to function in future operations. Security, however, cannot be sacrificed for rest.

A stand-to is held both morning and evening to insure that every man adjusts to the changing light and noise conditions, and is dressed, equipped, and ready for action. The stand-to should start before first light. It should start before dark in the evening and last until after dark. The starting and ending times should vary to prevent establishing a pattern, but the stand-to must last long enough to accomplish its purpose.

The battalion may have its companies dispatch patrols whose missions contribute to battalion security.

You may dispatch patrols, in addition to those required by battalion, to satisfy the company's security needs. You may have the patrols reconnoiter deadspace in the sector, gaps between platoons, gaps between the company and adjacent units, or open flanks. Your company reserve normally provides these patrols.

Platoons may dispatch similar security patrols. All patrols sent out by your company or its platoons must be coordinated with the battalion S2.

Passive security measures include such things as camouflage, movement control, light and noise discipline, proper radiotelephone procedures, and the use of ground surveillance radars (GSR), and ground sensors.

Ground sensors and GSR may be employed to give warning of enemy movement. TOW and Dragon gunners, with their daysights and nightsights can add to the security effort both day and night. The company should use its night observation devices for surveillance.

Combat Service Support. You select the general locations for the company support, the company aid station, and the PW collection point.

Your company supports are usually split with some elements going with the company and other elements going with the battalion combat trains. Only those vehicles, personnel, and supplies needed to immediately support the company are forward with the company. Those not immediately needed remain with the company elements located with the battalion combat trains. The forward elements of the company should be in defilade (in a covered and concealed

position) behind the company. Equipment (such as rucksacks, sleeping gear, and personnel items) not continually needed by the soldiers should be maintained in the company rear and brought forward when needed.

The company aid station is located near your company CP. The PW collection point is located to the rear of the company, but away from the company CP.

Selection of the Command Post and Observation Post. When the terrain allows good observation over most of the company sector, you select an OP, normally in a forward platoon position, from which you can observe the fighting. (Your OP is not the same as an OP established for security.) It may be necessary to select more than one OP to provide observation over the entire sector. Although the OP is your battle station, you go where you are needed, keeping the CP informed of your location ([Figure 1-14](#)).

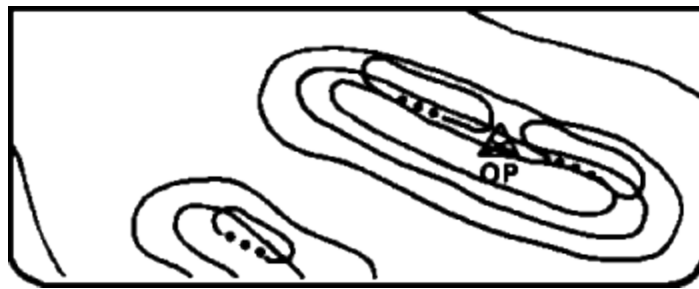


Figure 1-14. Commanders Observation Post.

You select a CP to the rear of the forward platoons. The CP should be in defilade and concealed from air and ground observation. You also select covered and concealed routes to and from the CP. The CP normally provides its own security with headquarters personnel. Additional security may be obtained by positioning the CP near the reserve. It may, in special situations, be necessary to secure the CP with a rifle squad.

When the terrain allows only limited observation over the company sector (a squad sector for example) you may not select an OP. You may select only a CP and operate from it. In this case, you would still move to where you are needed but the CP would be your battle station.

Both the OP and CP are dug-in and fighting position are prepared.

Priority of Work. There are many tasks that must be accomplished during a defense. You must decide on a priority of work which indicates the sequence for accomplishing these tasks. Although listed in sequence, several tasks may be accomplished at the same time. The priority of work is usually stated in the standard operation procedure (SOP) or in the operation order (OPORD). When it is in the SOP, you only state in your OPORD (para 3 [coordinating instruction]) any changes you want because of the situation. An example priority of work sequence is:

- Post local security.
- Position TOWs, Dragons, machineguns, and troops and assign sectors of fire.
- Clear fields of fire and prepare range cards.

- Prepare fighting positions.
- Install phone lines.
- Emplace obstacles and mines.
- Improve primary fighting positions to include overhead cover.
- Prepare alternate and supplementary positions.
- Stockpile ammunition, food, and water.
- Dig trenches between positions.

12. Defensive Planning.

You initiate your estimate upon receipt of the mission. You analyze the situation based on the factors of METT-T, and develop alternate courses of action.

You should consider the following items as you develop your courses of action:

- Enemy avenues of approach/courses of action available.
- Engagement areas (where the enemy will be destroyed).
- Key/decisive terrain.
- Weapons positions.
- Security/surveillance.
- Limited visibility.
- Maneuver space/dispersion.
- Decision points.
- Preparation of positions.
- Combat support.
- Logistical support.
- Command and control.

NOTE Some of these items may be specified in the battalion task force commander's intent.

- **Enemy Avenues of Approach/Courses of Action Available.** You use your analysis of the terrain in your area of operations to determine avenues of approach available to the enemy ([Figure 1-15](#)). Battalion avenues of approach specified by the battalion task force S2 are refined to company and platoon level mobility coordinators based on the doctrinal frontages for these units. A reinforced motorized rifle company normally attacks on a 500 to 800 meter frontage. A platoon frontage varies from 100 to 200 meters.

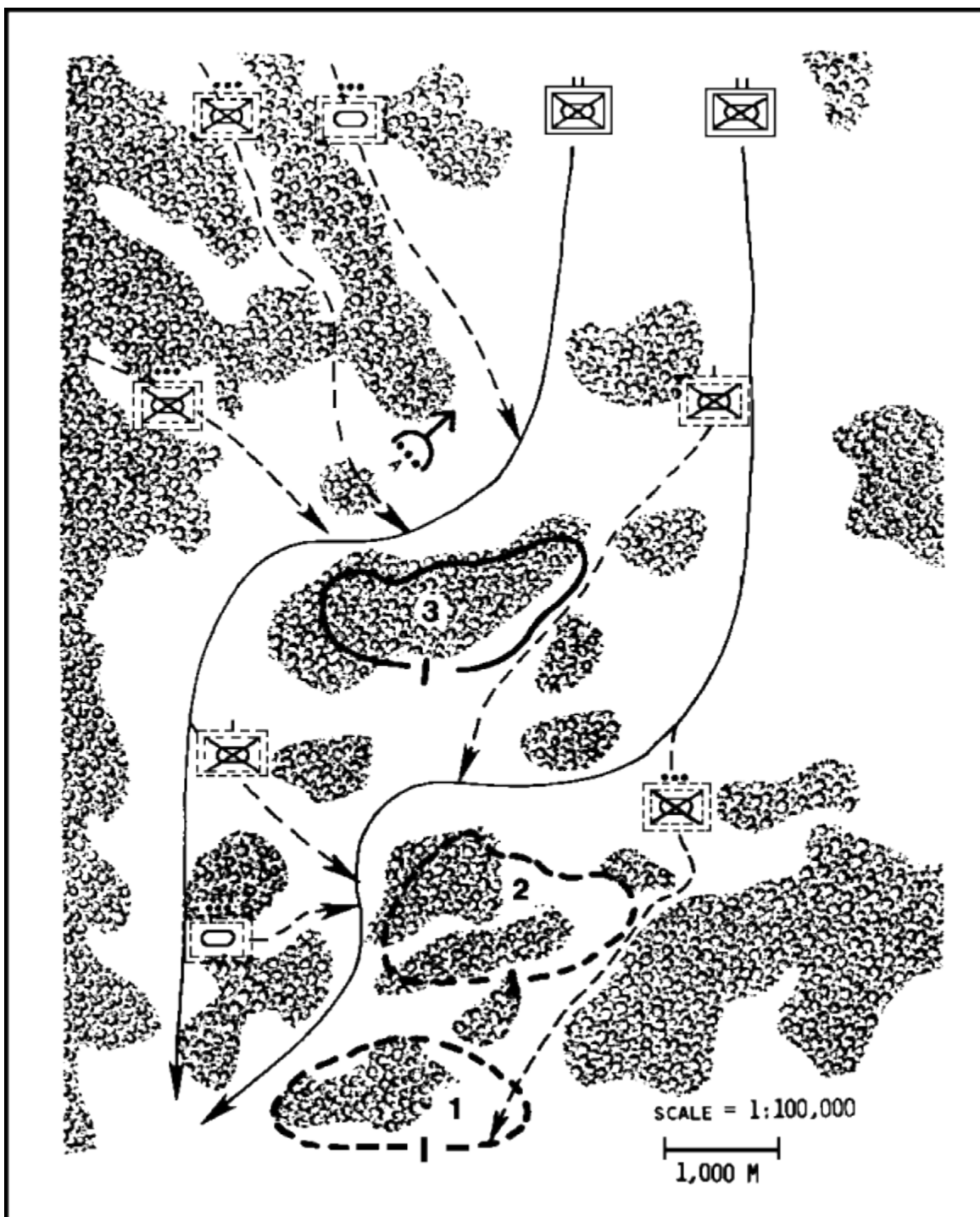


Figure 1-15. Analyze Avenues of Approach.

Once you have determined all available enemy avenues of approach, you are then able to determine the alternatives available to enemy forces you are likely to face. You should consider both the most likely enemy course of action, and the most dangerous.

- **Engagement Areas.** You should always consider where you can concentrate your fires from mutually supporting positions. The selection of the most favorable engagement area(s) to maximize enemy casualties is a critical decision which should be made early. If the company

team is armor based, and given a mission to destroy as much of the enemy as possible without accepting an assault, engagement areas should generally be located at 1500 meters and greater from company team positions. If the company team is mechanized infantry based, and retention of key terrain is desired, engagement areas are located at closer range to maximize mutually supporting antitank fires from all available weapon systems, including DRAGONS and (AT4s). Generally the battalion commander's intent will provide definitive guidance as to which of these techniques will be used.

- **Key/Decisive Terrain.** Your terrain analysis will have determined what key terrain dominates, influences, and controls existing avenues of approach in the company team area of operations. Terrain decisive to the battalion will normally have been identified by the battalion task force S2.

When ordered to retain decisive terrain, you must organize your efforts accordingly, ensuring that sufficient combat power is allocated to this task.

You use key terrain to position your weapon systems where they can favorably engage the enemy where he is likely to appear. You may find it necessary to hold a key terrain feature for a certain period of time to maneuver elements successfully. Other key terrain features may be controlled by fire, or otherwise denied to the enemy without positioning friendly troops directly on top of them.

- **Weapons Positions.** You consider weapons positions two levels down. As you select favorable positions for tanks, BFVs, improved TOW vehicles (ITVs), and dismounted rifle teams, you attempt to maximize their firepower and mobility without sacrificing protection.

- **Security/Surveillance.** You must consider security and surveillance measures to do the following:

- Place observation on avenues of approach which cannot be covered by direct fire or observation from primary positions.
- Observe primary avenues of approach to enable occupation of hide positions.
- Place surveillance on dead space.
- Protect obstacles, fighting positions, and routes from detection.

You use OPs, surveillance devices, including thermal sights, and patrols to accomplish these tasks. Patrols are normally directed by the battalion task force headquarters. Additional patrols must be coordinated with adjacent units, and the battalion task force S2 for inclusion in the battalion task force surveillance plan.

- **Limited Visibility.** Limited visibility is a critical consideration since darkness and smoke obscuration often occur during modern combat. Depending on the severity of darkness and smoke obscuration, and the availability of night observation devices, the selection of an entirely different course of action may be necessary. Even when thermal sights enable the company team to fight from daylight positions under limited visibility conditions, additional coordination and control measures are generally needed.

- **Maneuver Space/Dispersion.** You normally allocate maneuver space to your platoons by assigning them battle positions. As you do this, you must consider the weapons positions available. Primary weapons positions should be dispersed laterally and in depth so that only one weapon system can be simultaneously engaged by direct or indirect fire. This is normally achieved by dispersion of tank/BFV primary positions not less than 100 meters apart. The dismounted element is employed in mutually supporting individual fighting positions to control dismounted avenues of approach by direct fire (small arms weapons, AT4s, and Dragons). Use of alternate and supplemental positions should also be considered ([Figure 1-16](#)). You must ensure that the graphic control measures assigned to the platoon support your intent as to when and how movement to alternate/supplemental positions will be conducted. By assigning engagement areas, TRPs, and smaller battle positions, you can directly control the movement to alternate/supplemental positions. Assigning larger battle positions gives the platoon leader greater freedom of maneuver. Shift to alternate/supplemental positions is controlled within the platoon, based on the TRP orientations you assigned.

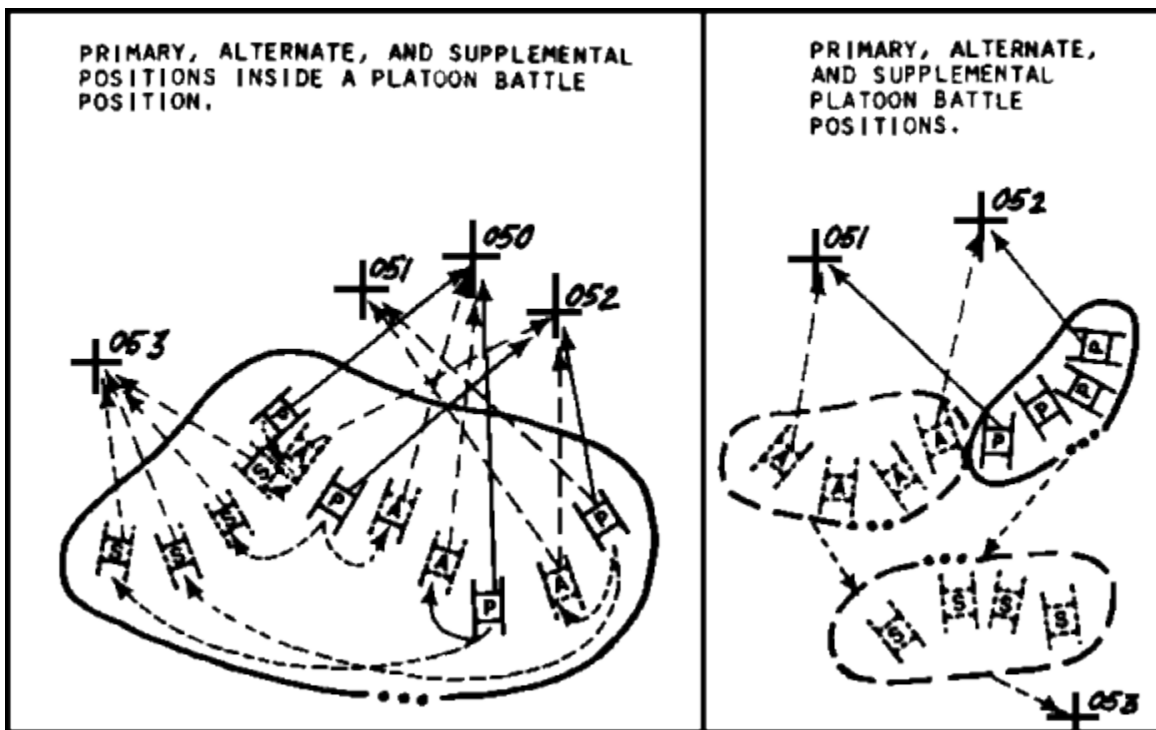


Figure 1-16. Platoon Maneuver in Battle Positions.

As you assign mutually supporting platoon battle positions, you must ensure that they are dispersed enough to cover all high priority avenues of approach with interlocking fires. Excessive dispersion can cause platoon battle positions to lose mutual support and depth.

- **Decision Points.** You must visualize the battle to determine those critical actions which must be taken to accomplish your plan, consistent with the battalion task force commander's intent. Examples of such actions are:
 - Initiation of fires.

- Concentration of fires.
- Movement to platoon alternate/supplemental positions.
- Disengagement to subsequent positions.
- Counterattacks.
- Transition of long-range to close-range battle.

As you consider these critical actions, you must determine how best to maneuver your platoons to maintain unity of effort and maximize mutual support. You must consider how long it will take to shift your platoons from position to position, based on the following:

- Vehicle speed.
- Trafficability.
- Reaction time (how long it takes the platoons to start moving).
- Mounting/dismounting of mechanized infantry.

- **Preparation of Positions.** You assign levels of preparation to platoon battle positions based on the battalion task force commander's intent, the time available, and his visualization of the battle. You may raise the level of preparation of positions you are assigned to defend, but may not lower it. The levels of preparation used by platoons and company teams are occupy, prepare, and reconnoiter. These levels are defined as follows:

Occupy. Your company team will occupy the BP from which it initially defends. The position will have first priority for reconnaissance and preparation prior to the initiation of the defense. You will occupy this position ready to fight not later than the time specified in the task force OPORD mission statement.

Prepare. Your company team will prepare one or more subsequent BPs when directed to do so by the battalion task force. Your company team may be required to complete the destruction of a specific size enemy force (such as a motorized rifle battalion) from its last set of prepared positions. Actions to prepare a BP include:

- Physically site each weapon system in its fighting position (primary, alternate, and supplemental positions).
- Establish fire control references (sketch cards, aiming stakes, position stakes, and TRP markets).
- Emplace wire for communications.
- Dig in fighting positions to improve available cover and concealment. Prepare overhead cover for infantry positions.
- Prestock Class III and V supplies.

- Reconnoiter and prepare routes between primary, alternate, supplemental, hide, and subsequent positions.
- Construct obstacles.
- Rehearse movements required by the plan.
- Establish security measures, to include OPs, patrols, and limited visibility surveillance plans.

Reconnoiter. Subsequent BPs are reconnoitered by one or more representatives of the unit. As a minimum, position sketches drawing tentative weapon sites, TRPs, engagement areas (EAs), obstacles, and routes are prepared.

- **Combat Support.** You must consider what field artillery, engineer, air defense, and combat intelligence support is available to you. You must consider how those assets are used to support the battalion task force plan, and how they can further support your own mission. You must ensure that coordination is completed to obtain needed support from these assets. Specific considerations for the use of these assets are described below.

Indirect Fire Support. Indirect fire control measures should be integrated with the direct fire plan. Artillery targets are also planned to engage targets in dead space or out of direct fire range. Priority targets are designated, if available. FPFs should be planned to defeat dismounted assaults. Priority of calls for fire should be assigned to the platoon best able to influence the battle with indirect fires. Priorities for use of special munitions, such as Copperhead or dual-purpose improved conventional munitions (DPICM), should be considered.

Obstacles. You study the battalion task force obstacle plan. You determine what obstacles you have been assigned to construct, secure, or execute. You also plan hasty protective obstacles as appropriate to support your scheme of maneuver. Once you have determined these tasks, you should establish work priorities for obstacle emplacement, and assign responsibilities for obstacle security and execution.

Company team obstacle efforts should be closely coordinated with supporting engineers. Additional obstacles must be coordinated through S3 channels. Requests for materials to assist in constructing obstacles are submitted through S4 channels.

Air Defense. You are responsible to ensure that air defense measures within the company team area of- operations minimize the threat from the air. You may be able to rely on supporting short-range air defense (SHORAD) systems for the bulk of your active air defense. Close coordination and liaison with supporting air defense elements should be established. Coordination prior to battle should ensure that supporting air defense crews understand the company team fire plan and scheme of maneuver. At the same time, you should determine the extent to which supporting air defense weapons support your maneuver scheme, and requirements for your own weapon systems to engage enemy aircraft.

You are solely responsible for planning your passive air defense. Overhead cover must be supplemented with artificial camouflage to minimize the enemy's ability to detect stationary friendly weapon systems. Neglecting these measures can lead to catastrophic losses.

Combat Intelligence. You should consider how well battalion task force intelligence collection assets, including scouts and ground surveillance radar, can support your maneuver. This will help you focus your own security and surveillance efforts on vulnerable areas not covered by these assets, and on close-in security. Combat electronic warfare intelligence (CEWI) may be co-located with company elements within the battle position. You must ensure that coordination takes place with these elements to ensure unity of effort.

- **Logistical Support.** You should consider the needed logistical support to sustain your scheme of maneuver. Specific items you need to consider include:

- Organization of the company trains (unit versus echeloned).
- Location and displacement of the company combat trains.
- Security of logistics assets.
- Location and preparation of ammunition prestocks.
- Refueling and feeding (when, where, and how often?).
- NBC supply and decontamination plan.
- Casualty evacuation and treatment.
- Enemy prisoner of war (EPW) guard and evaluation.
- Maintenance procedures including time criteria for on-site repair, unit maintenance collection point (UMCP) locations, maintenance priorities (what gets fixed first).

- **Command and Control.** You need to have a firm grasp on how you intend to control your elements prior to and during the battle. You issue a verbal OPORD or fragmentary order (FRAGO) by the most secure and timely means available.

Graphic control measures should be clear, consistent, and easy to understand so that platoon leaders can copy the overlay prior to receiving the oral order. You may use a modified execution matrix to record platoon missions and assist you in organizing your notes ([Figure 1-17](#)).

The matrix is constructed as follows: Each set of positions is represented by a horizontal row of boxes. Each subordinate unit is represented by a vertical row of boxes. In each box, the assigned BP is recorded in the upper left half of the box; the initial orientation and subsequent orientations are recorded in the lower right half. On-order orientations are circled. Overwatching fires during movement to subsequent BPs can be designated by placing a square over the TRP orientation.

Levels of preparation are recorded to the left side of each horizontal row of boxes. Specific subordinate units are recorded above each vertical row of boxes. General orientations for the

entire unit are recorded to the right of each horizontal row of boxes. The Execution Matrix may be placed directly on the planning map or overlay.

LEVEL OF PRE- PARATION	1ST PLT	2D PLT	MECH PLT (DISMOUNT ELEMENT)	MECH PLT (FIGHTING VEHICLE ELEMENT)	ITV PLATOON	GENERAL ORIENTATION
OCCUPY	4A 112 110	4B 112 115	4C 112	4D 109	4E 112 109	AA1
PREPARE	12A NH EA FIST	12B SH EA FIST	12C 120-121	12C 120-121	12E 120-121	AA1
(RECON CATK BY FIRE)	12D 121	13B EA FIST	13C EA FIST	13C EA FIST	13D EA FIST	AA1
RECON	8A	8B 118 119	8C 117 118	8C	8D 116	AA1
RECON	13A 121-122	13B 122-123	13C 121-123	13C 124	13E 121-123	AA1



 - On-Order Orientation
 - Overwatching Fires.

Figure 1-17. Execution Matrix.

After the order is issued, backbriefs and rehearsals are conducted as time permits. Each critical action should be rehearsed. Conducting rehearsals enables the company team to reduce its reaction time, and allows you to revise your decision points based on actual terrain. This is critical when the key to the defense is maneuver.

SOPs are also invaluable to the preparation and conduct of the battle. You should review all of your SOP items to ensure that they are the best techniques to accomplish the tasks at hand. If not, you must change the SOP in your orders and ensure that all your subordinates are informed of the change, down to the lowest level. Changes to the SOP should generally be minimized to reduce confusion, maintain unity of effort, and encourage aggressive actions in the absence of orders. SOPs must be given to all attached and supporting units.

13. How the Company Team Uses Combined Arms in the Defense.

You have a variety of assets to employ. These include antitank weapons (tanks, BFVs, and ITVs), dismounted infantry (equipped with DRAGON, SAWS, machine guns, grenade launchers, and rifles), fire support (from mortars and artillery and other means), and obstacles (employed by combat engineers, and the company team itself).

- **How to Use Tanks, BFVs, and ITVs.** Tanks, BFVs, and ITVs provide the main antiarmor fires of the company team. Their correct use is key to the success of the defensive battle. You assign battle positions and sectors of fire to tank platoons, BFV and dismount elements, and ITV sections.

When assigning positions, you must consider the following factors:

- Engagement areas and fields of fire.
- Cover and concealment.
- Flank engagements.
- Dispersion.
- Depth.
- Mutual support.
- Limited visibility.
- Maneuver.

Engagement Areas and Fields of Fire. Tanks, BFVs, and ITVs need an unbroken line of sight to engage enemy targets at maximum engagement ranges. Elevation changes, vegetation, and man-made objects can create dead space that cannot be observed from a protected position. In order to be able to successfully engage targets, TOW systems require an average of 20 to 25 seconds to acquire and track the missile to the target. Tanks may require 7 to 15 seconds to engage and destroy a similar target. In close terrain, it may be necessary to improve existing fields of fire by cutting trees and brush to create favorable fields of fire. Existing/reinforcing obstacles are used to slow the enemy's movement, providing the necessary tracking time.

Favorable fields of fire are not necessarily wide; individual weapon systems require limited sectors of fire which enable them to engage the enemy one vehicle at a time ([Figure 1-18](#)).

When relatively wide sectors of fire must be covered, several weapon systems must be massed to defeat an enemy formation within a few seconds.

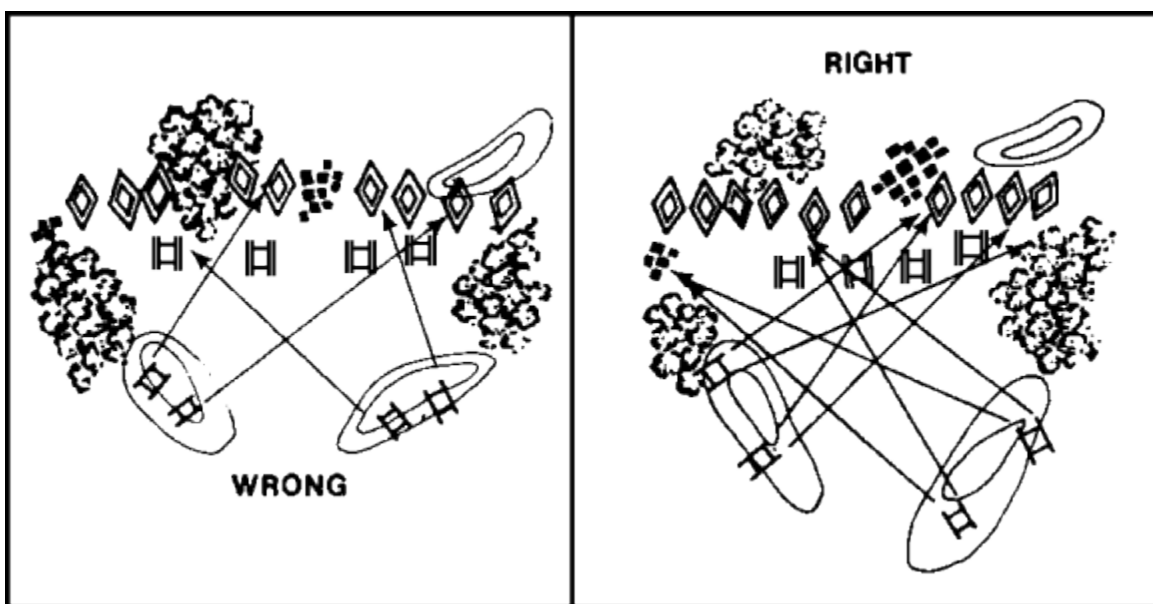


Figure 1-18. Using Fields of Fire.

Cover and Concealment. Tanks, BFVs, and ITVs are placed in the best available positions to degrade the effects of enemy direct and indirect fire. Vegetation, defilade, camouflage, and other forms of concealment are used to hinder enemy detection of the company team's weapon systems and their signatures. Obvious key terrain is avoided whenever possible to avoid suppressive indirect and direct fires.

Tanks, BFVs, and ITVs fight from hull defilade positions. When natural cover does not offer good hull defilade positions, some should be constructed using available earth-digging equipment. Hide positions are used by tanks and BFVs to hinder detection by enemy observation systems.

Flank Engagements. Tanks, BFVs and ITVs should be oriented to achieve flanking fires. Flank shots increase kill probabilities against enemy armored vehicles, and lessen the enemy's ability to detect friendly fires and maneuver against friendly positions.

Dispersion. Tank, BFV, and ITV positions are dispersed laterally and in depth to reduce the enemy's ability to suppress friendly fires, to hit the enemy from multiple directions, and to enable the company team to deliver continuous fire on the enemy. Sufficient space must be available to allow for primary, alternate, and supplementary positions, as well as a hide position for each.

Primary and alternate positions should be separated by a minimum of 50 meters and each weapon should have at least one alternate position. A tank platoon or BFV team requires enough space to maneuver within its assigned battle positions. When using more than one alternate position vehicle, or supplemental positions within the platoon or BFV team, battle positions will require even more maneuver space.

Depth. Engaging the enemy when he enters the maximum engagement range of available tanks, BFV, and ITV systems increases the time and distance available to engage and destroy the

enemy. A surprise engagement using concentrated flanking fires at shorter range may give the company team a better chance of stopping the enemy forward of his positions. You must determine which method better reflects the battalion task force commander's intent. The battalion task force commander's intent is generally expressed in his concept of the operation, which will normally dictate whether the team will engage at maximum range or allow the enemy to be engaged simultaneously with massed fires at short to medium range.

You may not be able to maintain a reserve, but you should attempt to have part of your force uncommitted when your fires provide insufficient depth. You may depend on other elements of the battalion task force for depth. Positioning weapon systems in depth enables the company team to:

- Engage the enemy with the maximum firepower at a critical point and time.
- Disengage using internal overwatch.
- Counterattack using the least engaged elements (preferably a designated counterattack force).

Mutual Support. Mutual support is rendered by units against an enemy by their assigned tasks, their relative positions, and their inherent capabilities (normally the range and effectiveness of their direct-fire weapons and their ability to maneuver). Tank, BFV, and ITV positions must be arrayed along the likely enemy avenue(s) of approach in a way that prevents the enemy from concentrating against only one set of positions. BFV elements within the company team normally are also positioned to enable them to support the dismount elements with direct fire. The use of dismounted mechanized infantry is discussed later in this part of the lesson.

Mutual support is best achieved by positioning weapons laterally and in depth and assigning them interlocking sectors of fire ([Figure 1-19](#)). This will often enable neighboring weapon systems to cover each other's dead space, making sure assigned sectors of fire can be completely covered. With proper positioning of your elements, you can achieve flank engagements for some elements while achieving mutual support for all elements.

It may be necessary to rely on other battalion task force elements for support. Risk must be recognized and accepted if mutual support is not achieved.

NOTE: Properly positioned weapon systems can eliminate the enemy's mutual support. One method is to position weapon systems to engage enemy targets without revealing friendly locations. Another is to simultaneously engage the enemy's lead and supporting elements. Reverse slope positioning enables weapon systems to engage the enemy's lead elements while using the terrain to mask his follow-on elements.

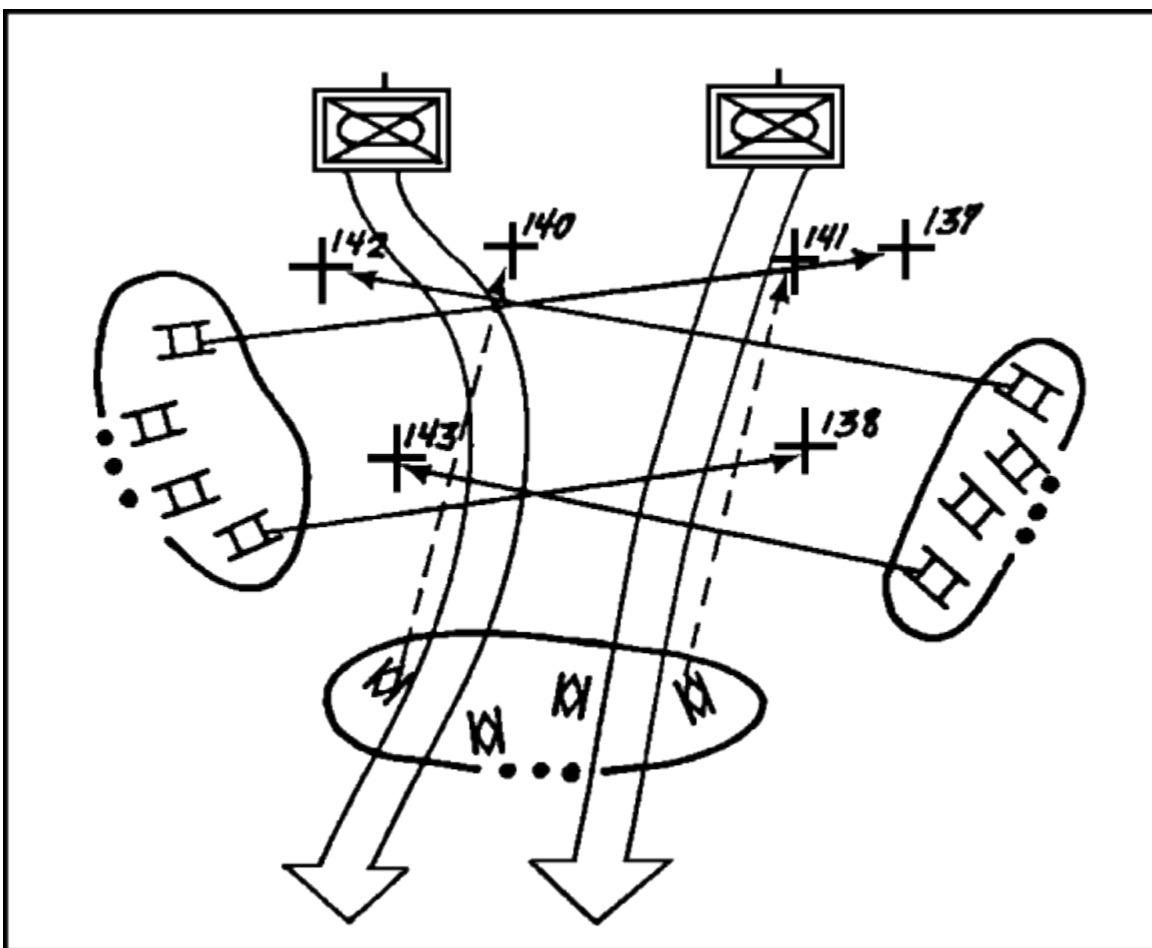


Figure 1-19. Mutual Support Between Platoons.

Limited Visibility. Smoke, fog, and darkness will frequently limit observation and fields of fire. When engagement ranges are less than ideal, flanking fire and covered and concealed positions increase in importance.

Maneuver. Covered and concealed routes for movement into and out of fighting positions must be available. These routes will enable vehicles to rapidly shift to and from primary, alternate, supplemental, subsequent, and hide positions. It is sometimes necessary to prepare routes using engineer assets to support the overall maneuver plan.

The mobility, armor protection, and high rate of fire of tanks give them many advantages. Tanks should be positioned to commence long-range flank engagements at up to 2,800 meters whenever possible. After initial engagements are complete, tanks should move to alternate fighting positions to minimize the effects of suppressive direct and indirect fire when these threats exist. Tanks can concentrate fire against enemy formations with devastating results, and counterattack rapidly to complete the enemy's destruction. Tanks should be employed as platoons. Tank platoon positions should be mutually supporting but separated so that the enemy cannot mass fire against all the platoons at the same time.

The BFV provides long-range ATGM and 25-mm fires to the company team. BFVs are positioned laterally and in depth to provide flanking fires up to a range of 3,750 meters using

the TOW system. The small basic TOW load and the possible requirement to link up with the dismounted teams make the displacement of the BFV to alternate positions a critical task. The BFV has the capability to concentrate fires against lightly armored targets at ranges up to 2,200 to 2,500 meters using the 25-mm chain gun. The BFV must be positioned carefully to enable it to maximize both TOW and 25-mm fires and to link up with the dismount team as necessary. The BFV works well together with the tank in the counterattack. It can deliver suppressive fire while moving rapidly to close with the enemy and destroy him at close range.

ITVs are ideally employed as a unit under the control of the E Company (Co) commander to support the battalion task force scheme of maneuver. Occasionally, an ITV platoon may be attached or placed in OPCON to a company team. This is usually done when the E Co commander is unable to control all ITV fires throughout the battalion task force sector.

When available, ITVs provide long-range ATGM fires to the company team. Employment considerations are similar to the BFV with the following exceptions:

- ITVs are employed in two-vehicle sections. BFVs are normally employed by platoon.
- ITVs must disengage more often than the BFV to maintain standoff against enemy formations.
- ITVs support by fire when the company team is counterattacking.

● **How to use Dismounted Mechanized Infantry.** Dismounted infantry's role in the defense is to:

- Retain key or decisive terrain needed for the success of the defense.
- Destroy or suppress enemy vehicles and personnel in designated engagement areas with Dragon, AT4, and squad automatic weapon fires.
- Repel mounted or dismounted enemy attacks on avenues of approach that cannot be covered by BFV and tank fires.
- Provide security by patrolling, establishing OPs, ambushes, and securing obstacles.
- Clear fields of fire.
- Emplace obstacles to slow or canalize the enemy.
- Conduct mounted or dismounted counterattacks.

Dismounted infantry defends to retain key or decisive terrain, or to block either mounted or dismounted avenues of approach. They can be used to fix an attacking enemy by fire, while you maneuver with tanks and BFVs against the flanks and rear of the enemy. Infantry positions should be on terrain that prevents the enemy from assaulting across it mounted, protects the defenders from suppressive fire, and facilitates the construction and camouflage of individual fighting positions. Restricted wooded, urban, or broken terrain is chosen when available. Dismounted infantry should be located behind the forward edge of such terrain to provide

protection from the long-range suppressive fire. Because dismounted infantry is normally positioned in areas with limited fields of fire, OPs are used when necessary to provide security. When adequate cover and concealment is not available to provide sufficient protection, reverse slope positioning can protect dismounted infantry from long-range fires, achieve surprise engagement at close range, and deny the enemy use of key terrain.

The time to construct well-prepared fighting positions and protective obstacles must be considered in assigning battle positions to infantry. If you intend for the dismounted infantry to move to successive positions, routes must be available to allow both BFVs and rifle teams to rejoin.

Defensive operations may require rapid and frequent movement. Within minutes of its arrival at a BP, mechanized infantry must be able to defend that position, fire into an assigned area from it, or perform security missions around it. Mechanized infantry platoons and squads must make maximum use of the BFV's capabilities to assist with these tasks. The capable and sophisticated turret weapons of the BFV allow it to fight against the enemy in its own right while the dismounted infantry can be used to its best advantage.

When the commander's intent calls for the infantry to fight a close-in battle, dismounted infantry positions should be constructed so that flank security is maintained, and that the defense can continue through the depth of the position. This requires construction of supplemental positions to the flanks and rear of primary fighting positions. Covered and concealed routes between fighting positions should be reconnoitered, such routes can be supplemented by communication trenches if sufficient time is available.

There are four basic methods of employment for mechanized infantry platoons equipped with BFVs in the defense:

- BFVs and rifle teams on the same battle position covering the same avenue of approach.
- BFVs and rifle teams on the same battle position covering different avenues of approach.
- BFVs and rifle teams on different battle positions covering the same avenue of approach.
- BFVs and dismount elements consolidated at company team level under company team control.

BFVs and Rifle Teams on the Same Battle Position Covering the Same Avenue of Approach. This method of employment will cover a wide range of tactical situations. The primary advantages of this technique are:

- Ease of command and control within the platoon. Visual and wire communication between BFVs and rifle teams is practical. The platoon leader closely supervises both BFV and rifle teams.

- Dismount and remounting of vehicles is facilitated. This technique is most frequently used in the initial stage of a hasty defense.
- Security for the BFVs is increased.

This technique does not normally take maximum advantage of the capabilities of the BFV or its infantry ([Figure 1-20](#)).

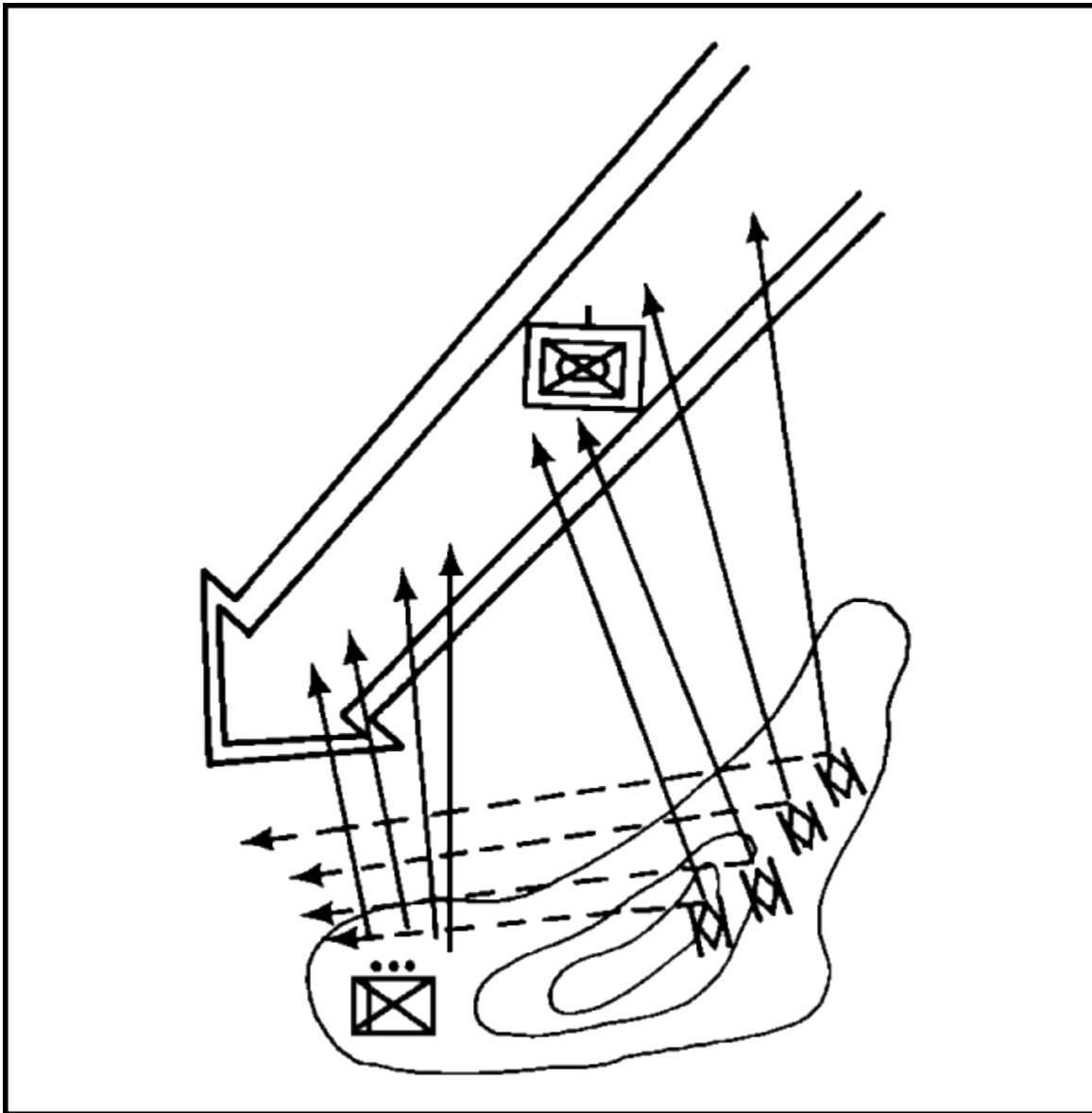


Figure 1-20. Same Battle Position, Same Avenue of Approach.

If the battle position covers a mounted avenue of approach, the BFVs are initially positioned to provide long-range fires. The infantry is positioned to stop any enemy dismounted attacks into the battle position. The infantry may also be placed on the reverse slope to provide close-in surprise fires into the flank of the mounted enemy while protecting themselves from the enemy's long-range suppressive killing fires.

If the battle position covers a dismounted avenue of approach, the infantry is positioned to cover it by fire and the BFVs are dug in, if possible, and used to supplement the defense primarily with the 7.62-mm coaxial machine gun. This is not an optimal use of the BFV, but may be the only course of action when defending restrictive terrain.

In all cases, the infantry is also used to emplace obstacles and conduct security operations such as the establishment of OPs and patrols, and the emplacement of Platoon Early Warning System (PEWs). The battle position can be resupplied using prestocks set out in squad or platoon loads.

BFVs and Rifle Teams on the Same Battle Position Covering Different Avenues of Approach. Because of the ability of Bradley-equipped infantry to separate into two distinct elements (dismount and fighting vehicle elements) it is possible for one BFV platoon to cover two avenues of approach ([Figure 1-21](#)). This method complicates disengagement and remount. It will not be possible for the platoon leader to exercise such close supervision and control over the platoon's efforts as when BFVs and rifle teams are intermingled. Disengagement and remount should be carefully planned and rehearsed. Wire communications between BFV and dismount elements should be established and maintained.

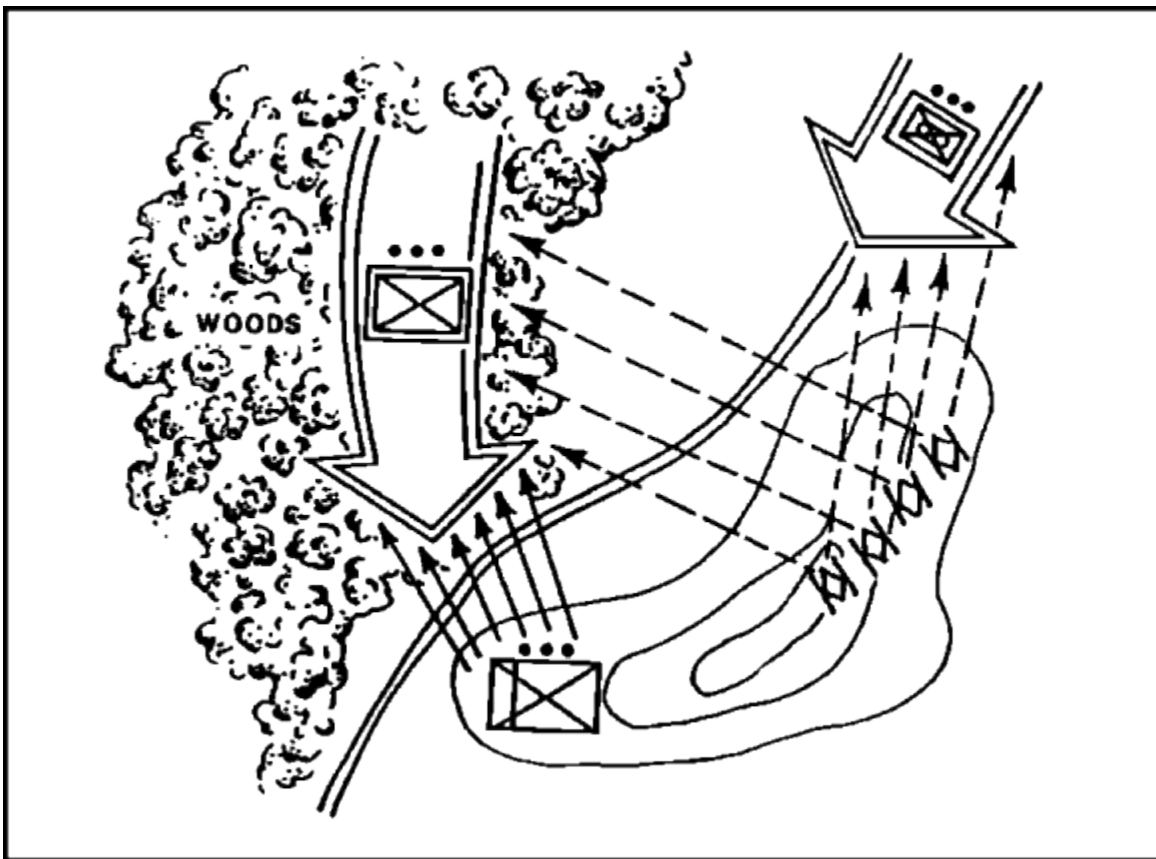


Figure 1-21. Same Battle Position, Different Avenues of Approach.

Rifle teams are positioned at locations within the battle position that offer the best cover and concealment and deny the use of dismounted avenues of approach to the enemy. This normally provides adequate security to the BFV team. The BFVs are positioned to cover a different

(normally mounted) avenue of approach but must be able to provide supporting fires to the rifle teams by moving to supplemental positions.

Ammunition resupply when using this technique can be done either by platoon or BFV/dismount or rifle team prestocks/resupply points.

BFVs and Rifle Teams on Different Battle Positions Covering the Same Avenue of Approach. In some situations, battle positions will not provide the type of terrain that allows that two elements the opportunity to maximize their inherent weapon systems. However, the speed, agility, and long-range fires of the BFV allow it to cover the same avenue of approach as the rifle teams but from a different position. This and other factors considered in the estimate may cause you to employ a Bradley platoon's BFVs on a different battle position than the platoon(s) rifle teams ([Figure 1-22](#)).

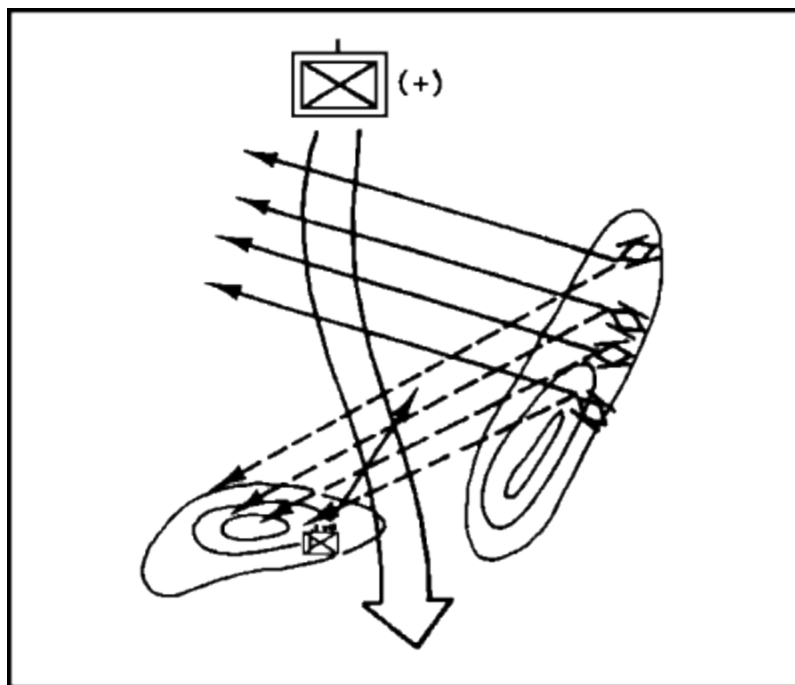


Figure 1-22. Different Battle Positions, Same Avenue of Approach.

This means that the rifle teams and BFVs fight separated but in relation to one another. The BFVs are able to provide the dismounted infantry with supporting fires from their primary, alternate, or supplementary positions. Both elements are positioned to engage enemy forces on the same avenue of approach but at different ranges. This would normally equate to a maximum three fourths (approximately 2,000 meters) off the effective range of the BFV's primary armament to ensure that the 25-mm can reach and overlap the forward dismount positions. As long as they are fighting in relation to each other, the platoon leader will normally continue to control both elements.

When using this method, maintenance of radio communications between BFV and dismount teams is critical. Wire communications should be established if possible, but there will be cases where this is not practical. Remount is most difficult when using this technique. It is critical that any remount planned be thoroughly coordinated and rehearsed. Backup communications and

signals should be planned to facilitate control. Resupply efforts using this technique will generally be split. Each team will normally have its own class V resupply point or prestock. Security requirements for the BFV teams should be considered; additional squad members may be sent with the BFV element if this does not degrade the dismount element's mission.

BFVs and Dismount Elements Consolidated at Company Team Level Under Company Team Control. When Bradley platoons, BFVs, and rifle teams are not going to be fighting in relation to each other, the control of both the mounted and dismounted elements of the platoon should be consolidated at company team level ([Figure 1-23](#)). Some situations are:

- The requirement to defend a company strongpoint.
- Two separate avenues of approach into the defensive sector, one mounted and other dismounted.
- When BFVs are deployed forward to initiate the fight, while infantry occupies defensive positions to the rear, continuing to prepare them as time permits.
- Requirement to conduct a dismounted raid or counterattack.

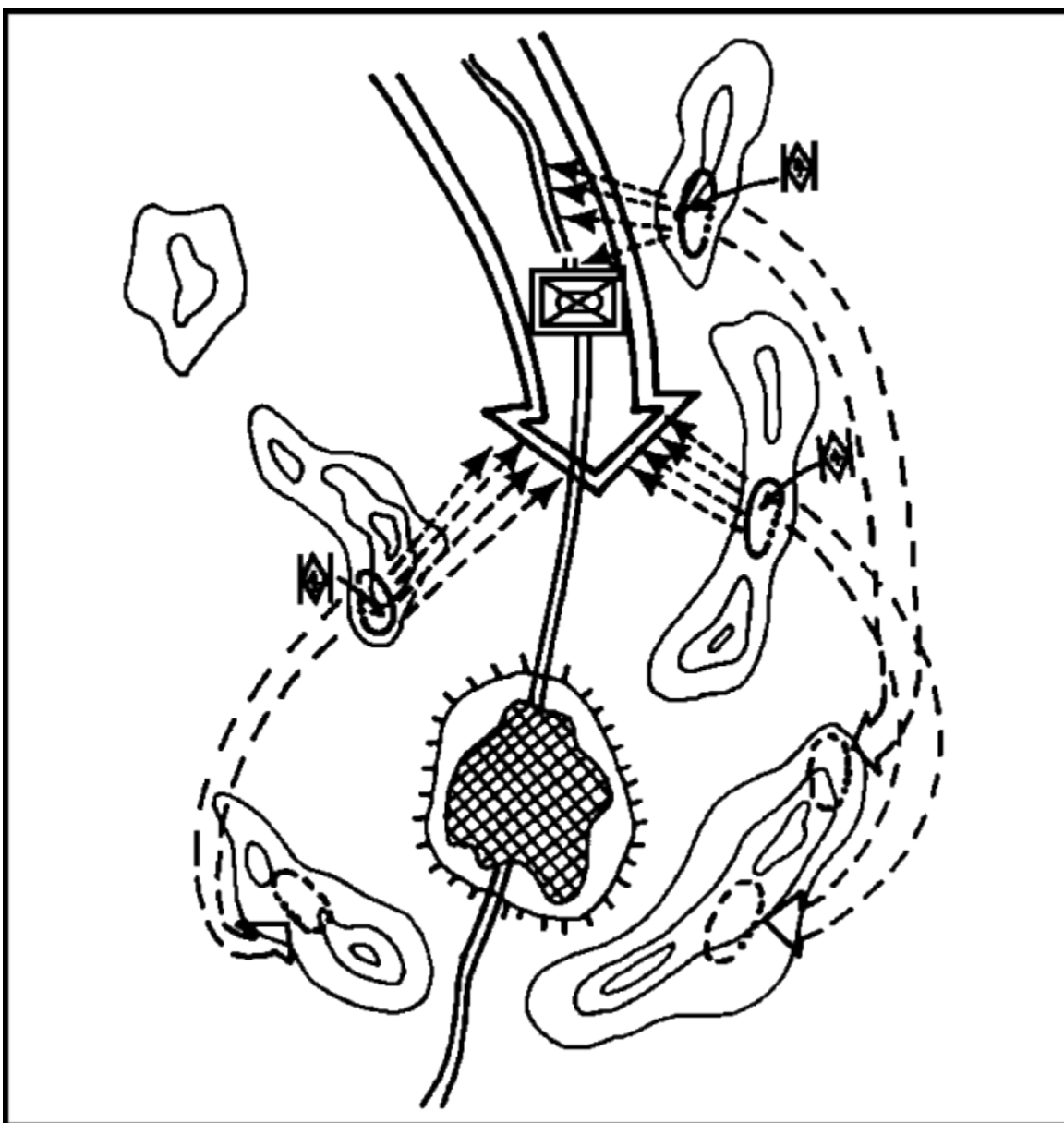


Figure 1-23. Company Team Positioned on Mounted and Dismounted Positions.

- **Security.** Infantry is used to provide local security within the company team's battle position, as well as to the front, flanks, and rear of the BP. To provide security, the infantry must detect the enemy and provide warning for the team to react. The infantry may have to fight to gain time. Security is particularly important in close terrain or during periods of limited visibility.

The mechanized infantry platoon(s) may utilize their rifle teams to secure the company team position. They sometimes secure BFVs and tanks by blocking one or more dismounted avenues of approach into the BP. Since tank and BFV fighting positions are spread laterally and in depth to cover mounted avenues, rifle teams used for security may be dispersed. Avenues of approach will normally be covered by observation and fire from tanks and BFVs. Antiarmor ambushes, OPs, hasty protective minefields, or road blocks are methods used by the rifle teams covering

these avenues. A rally point is set up, and rehearsals are conducted to make sure the dismount element(s) can be recovered.

Mechanized infantry platoons can provide security for the company team with patrols. When an area is too wide to cover from stationary positions, patrols must run between positions. Such patrols are usually dismounted to more easily detect enemy dismounted movement. However, mounted patrols may also be conducted.

- **Obstacle Emplacement/Guard.** Mechanized infantry may augment engineer assets in emplacing as well as guarding and executing obstacles in support of the company team mission. When constructing obstacles, overall resources and work priorities are considered in allocating tasks given to a mechanized infantry platoon. Details are generally used to accomplish these tasks rather than entire squads, allowing improvement of fighting positions and obstacle construction to occur simultaneously. These details are normally supervised by the company team XO. Completed obstacles must be placed under surveillance by the company team. OPs and antiarmor ambushes may be used close to an obstacle to prevent enemy breaching efforts during hours of limited visibility. The mechanized infantry platoon can also be used to close unexecuted obstacle targets and minefield lanes using demolition guard/firing parties. These parties generally remain under platoon control. The platoon must be kept informed of the situation to make sure that planned obstacles are executed in accordance with the overall plan.
- **How to Use Fire Support.** You must use the effects of indirect fires to support your scheme of maneuver. You should plan indirect fires to disrupt the enemy, cause confusion, and attrite his formations. Indirect fires are used to slow or prevent the enemy from breaching obstacles and to isolate the battlefield. Smoke can be used to help the company team disengage from the enemy when displacement to subsequent positions is required. You should plan fires in front of, to the flanks, on top of, and behind the each company team position. Indirect fires should also be planned on the far (enemy) side of obstacles.

Indirect fires are planned to cover dead space in the company team's area of responsibility. Indirect fire targets are also planned on dismounted avenues of approach. Targets should also be planned on likely overwatch positions.

You provide guidance to the FIST chief in putting together the company team indirect fire plan, designating priority of calls for fire, and priority targets/final protective fire targets. The priority of calls for fire is normally assigned to the platoon likely to be in the heaviest contact with the enemy during the progress of the battle, or the platoon best able to observe and control indirect fires on the most likely or dangerous avenue of approach. Priority targets are designated at places where:

- The enemy will appear on most likely or dangerous avenues of approach.
- Direct fire engagements will be initiated.
- Direct and indirect fires will be concentrated to maximize enemy destruction.

- The enemy is likely to use tanks, ATGMS, and self-propelled artillery in overwatch positions.

Final protective fires can be decisive in determining the outcome of the engagement. They are used within small arms range of the friendly position to stop the dismounted attacker from assaulting friendly positions. DPICM allows an FPF to be allocated to a dangerous mounted avenue of approach.

Priority targets will be shifted as the battle progresses based on your instructions. FPF, if available, are normally designated as priority targets. Special munitions are also planned by the FSO based on your guidance. For example, you may designate indirect fire target engagement priorities as Copperhead munitions against tanks, DPICM against APCs and air defense weapons, and smoke against ATGMS. You could use high explosive-variable time fuse (HE-VT) on enemy formations as they encounter an obstacle.

Once you have issued your guidance, the FSO completes the indirect fire plan. He coordinates fires across boundaries and forward of the battle handover line with higher and adjacent units. The FSO refines the indirect fire plan based on input from the platoon leaders and submits an indirect fire plan for approval by you. Once approved by you, the fire plan is submitted to the battalion task force headquarters through fire support channels.

- **How to Use Obstacles.** Obstacles should be positioned to support the scheme of maneuver. They greatly enhance the effects of direct and indirect fires by denying the attacker a mobility advantage ([Figure 1-24](#)). Obstacles should be employed to surprise the enemy whenever possible. They add shock effect to casualties caused by direct and indirect fire and canalize enemy formations into engagement areas.

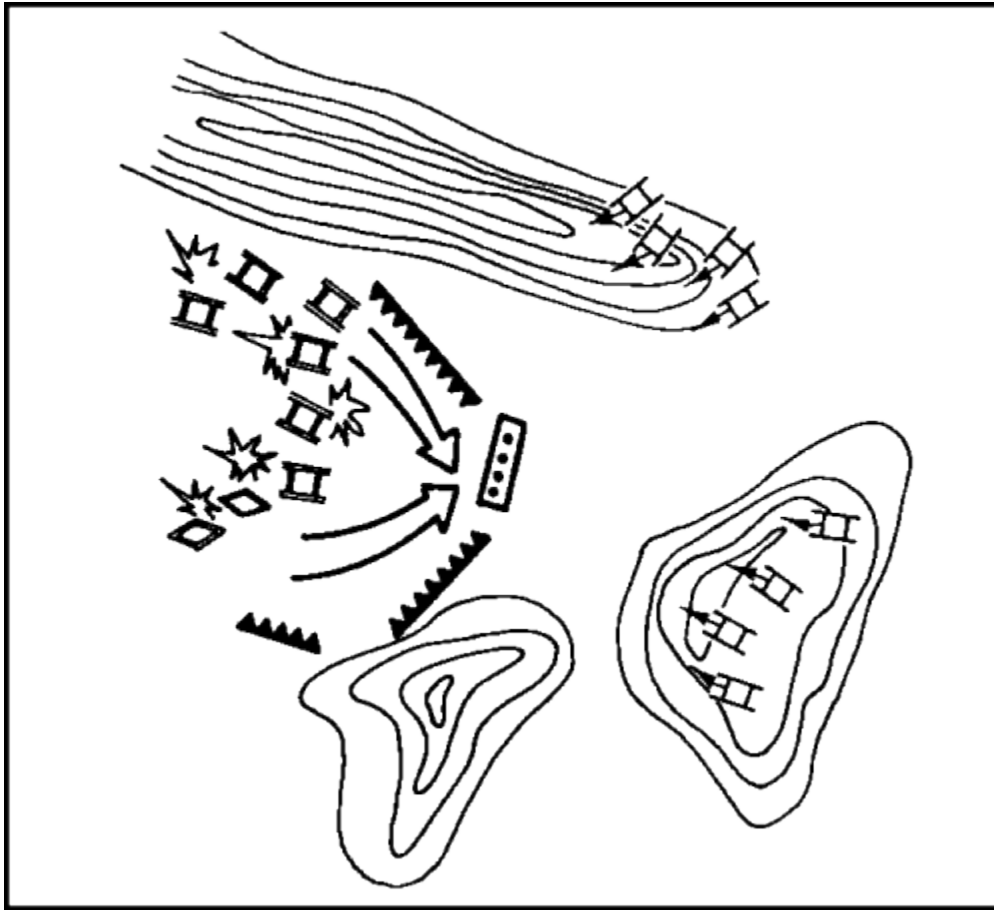


Figure 1-24. Integrate Obstacles With Direct/Indirect Fires.

Reinforcing obstacles should be employed in conjunction with existing obstacles whenever possible to increase their effectiveness and use limited material and manpower resources most effectively.

Obstacles are usually planned by the battalion task force staff. The engineers supporting the battalion task force help emplace planned obstacles, and provide technical assistance for battalion obstacle work parties. Your company assists in the execution of the battalion task force obstacle plan by:

- Providing manpower and equipment to augment the engineer platoon's efforts.
- Guarding obstacles not immediately executed upon emplacement.
- Firing obstacle targets as directed by the battalion task force commander/S3.
- Covering obstacles in the company team's area of responsibility with direct fire and constant surveillance.

You are responsible for coordination with the engineer platoon leader to make sure obstacles are placed correctly and can be covered with direct fire from company team fighting positions. You may direct the construction of additional obstacles within the assets available to you, primarily hasty protective minefields, wire obstacles, abatis, and craters. Positions of obstacles

constructed by the company team and requests for additional obstacles to support your company team's mission are submitted through S3 channels.

14. Summary.

This concludes the discussions on preparing a company/company team defense plan. We covered fundamentals of defense, how Threat units attack, and preparation of a rifle company and a company team defense plan. We will now move to planning a defense of urbanized terrain.

PART B - PLAN A DEFENSE OF URBANIZED TERRAIN

1. General.

To succeed as urban fighters, commanders and leaders must know the nature of urban terrain.

2. Characteristics of Buildings.

Most urban areas resemble the generalized model shown in [Figure 1-25](#).

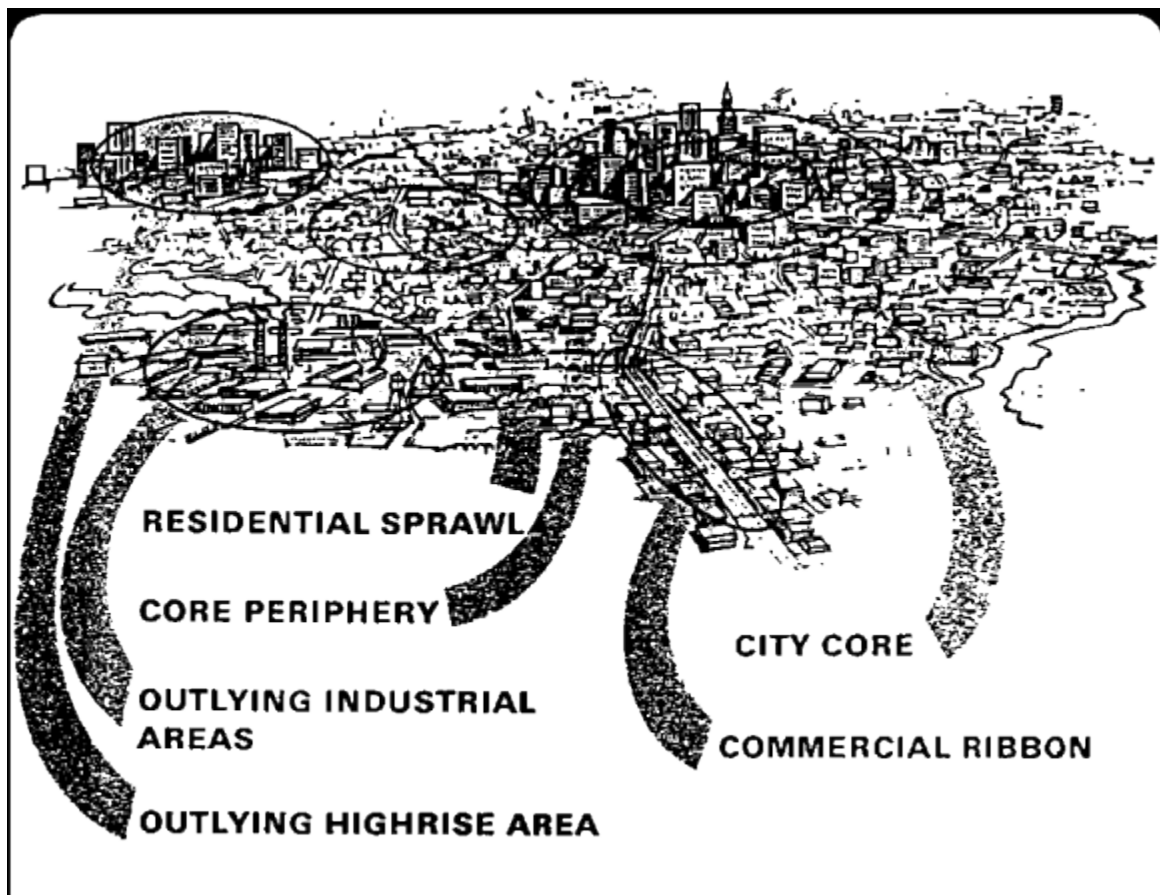


Figure 1-25. A Typical Urban Area.

Urban areas differ based on their location, size, and history. Towns, for example, have lower buildings than cities. They may not have developed outlying highrise areas. In general, an observer flying over

any city or town will notice a resemblance to this urban model, especially if the area has been redeveloped in the past 30 years.

Each of the model's regions have distinctive characteristics. Outlying industrial areas and residential sprawl, for instance, consist of low buildings, one to three stories tall. Buildings are detached and arranged in irregular patterns along the streets. There are many open areas.

- **Core periphery.** The core periphery ([Figure 1-26](#)) consists of narrow streets (12 to 20 meters wide) with continuous front of brick and heavy-walled concrete buildings. The height of buildings is generally uniform-2 or 3 stories in small towns, 5 to 10 stories in large cities.

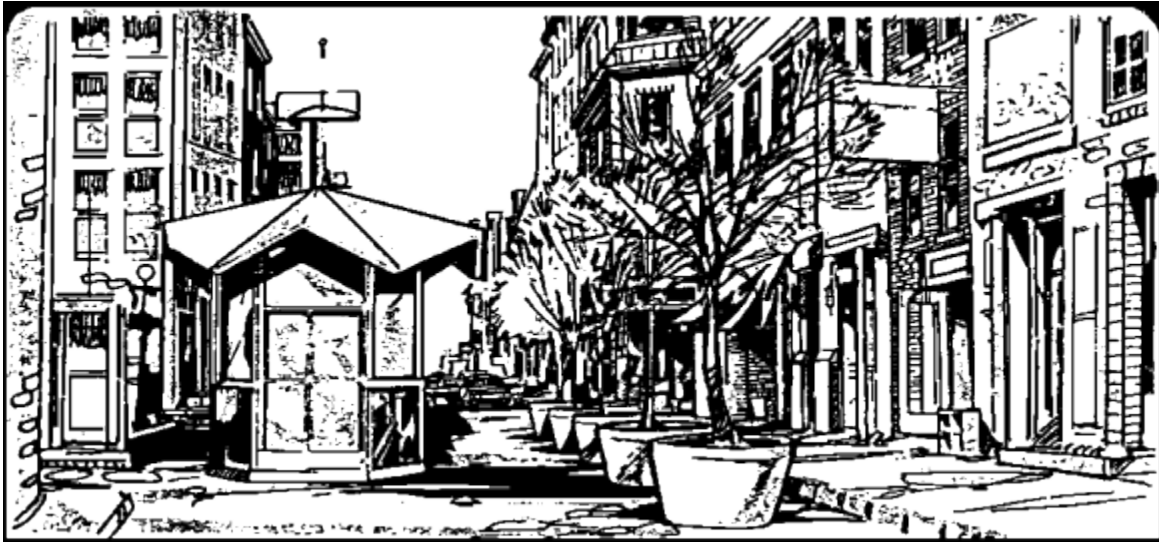


Figure 1-26. Core Periphery.

In most cities, the core has undergone more recent development than the core periphery. As a result, the two regions are often quite different. Typical city cores of today are made up of highrise buildings, which vary greatly in height ([Figure 1-27](#)). Modern urban planning allows more open space between buildings than that allowed in the old city cores or in core peripheries. Outlying highrise areas are dominated by this open construction style to a greater degree than city cores ([Figure 1-28](#)).

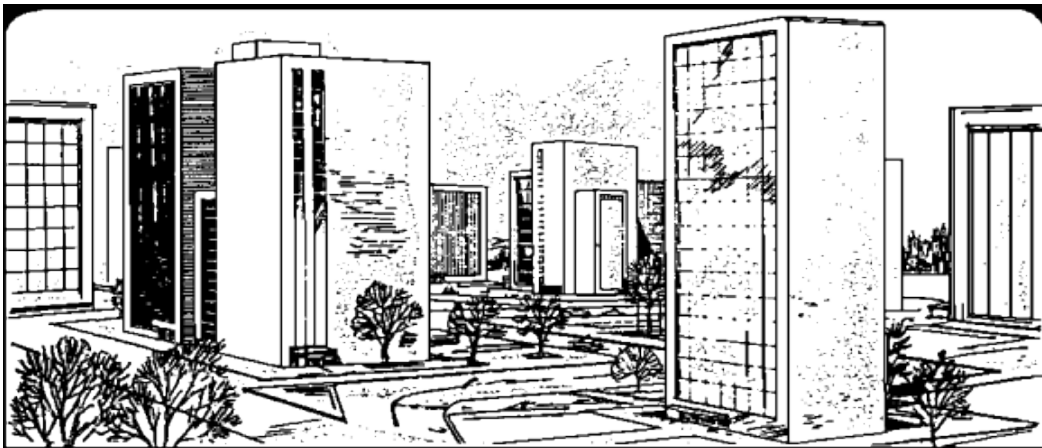


Figure 1-27. City Core.



Figure 1-28. Outlying Highrise Area.

- **Commercial Ribbons.** Commercial ribbons are rows of stores, shops, etc., built along either side of major streets through the built-up areas. Generally, those street are 25 meters wide or wider. The buildings are uniformly two to three stories tall, about one story taller than the dwellings built on the streets behind them ([Figure 1-29](#)).

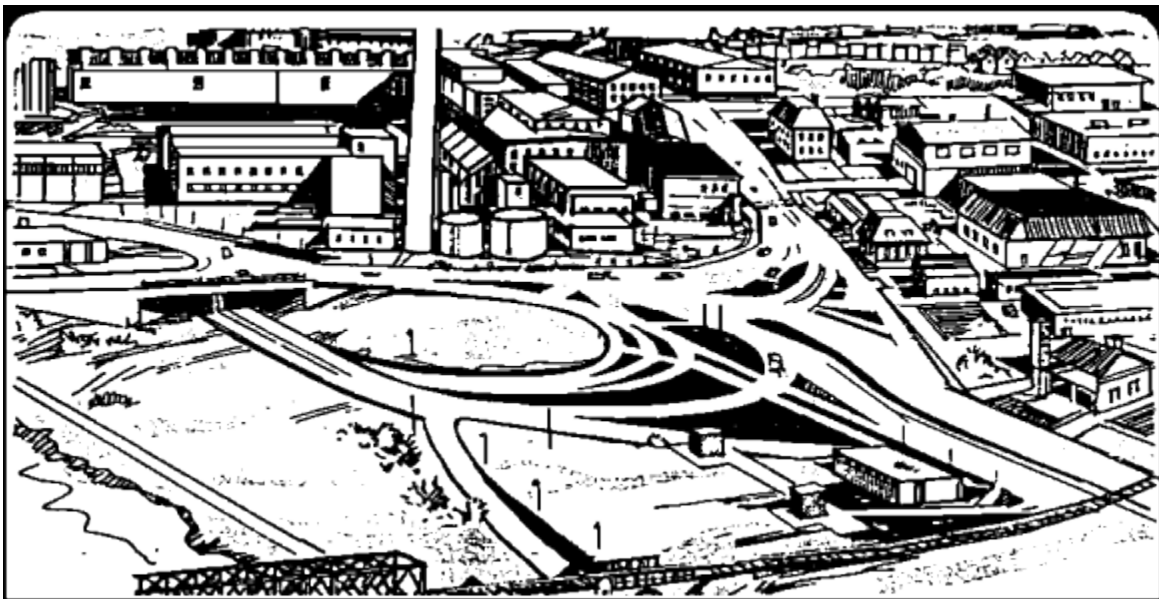


Figure 1-29. Commercial Ribbon.

In addition to their height, the buildings in each of the urban regions also have certain other characteristics in common.

3. Types of Building Construction.

The two basic types of building construction are mass (or frameless) and framed. Mass-construction buildings are those in which the outside walls support the weight of the building and its contents. The older mass-construction buildings are usually made of thick brick or stone walls. Mass-construction buildings normally have thicker walls and fewer windows than framed buildings. The windows in

mass-construction buildings must be aligned vertically so the walls can support the weight of the building ([Figure 1-30](#)).

Modern types of mass-construction buildings are wall and slab structures, such as many modern apartments and hotels, and tiltup structures, commonly used for industry or storage.

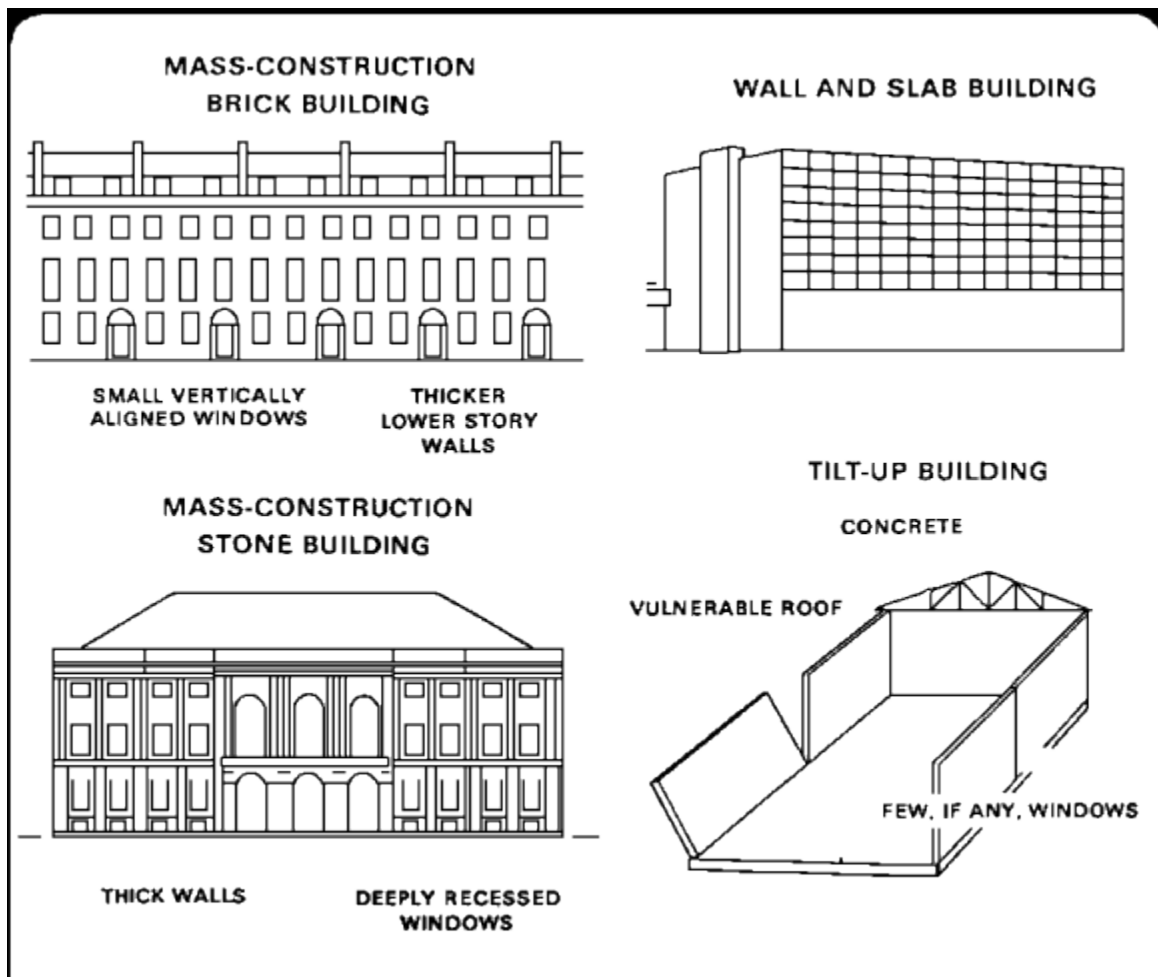


Figure 1-30. Mass Buildings.

Framed buildings are those supported by a skeleton of columns and beams ([Figure 1-31](#)). They are usually taller than frameless buildings. The exterior walls are not load bearing and are referred to as either heavy clad or light clad. Heavy-clad walls were common when framed buildings were first introduced. Those walls are made of brick and block, and in some cases are almost as thick as frameless brick walls, although not as protective. Light-clad walls are more modern and may consist of nothing more than glass.

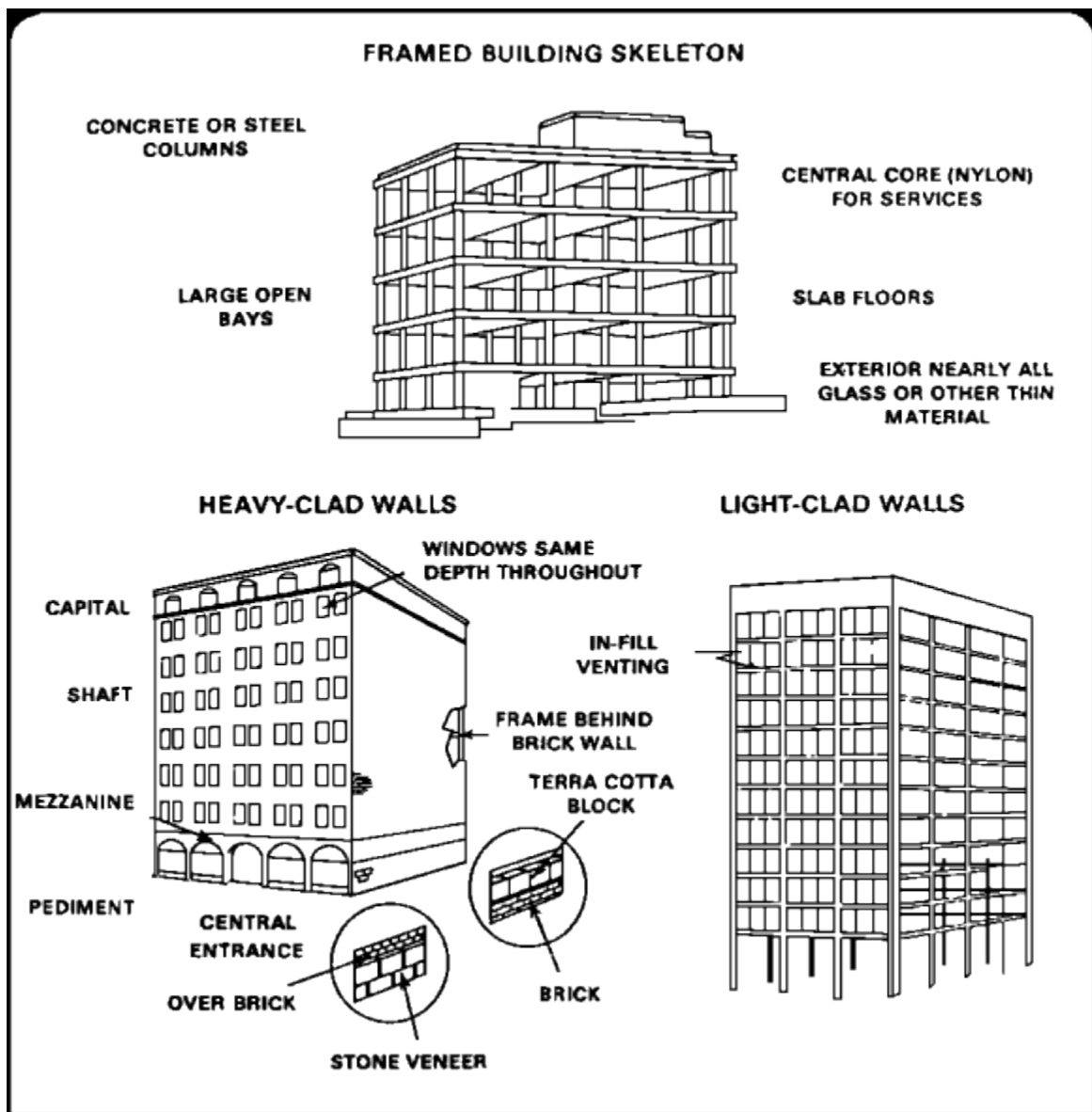


Figure 1-31. Framed Buildings.

The properties of framed and frameless buildings are shown in [Figure 1-32](#).

TYPE OF CONSTRUCTION	BUILDING MATERIAL	HEIGHT (STORIES)	AVERAGE WALL THICKNESS (CM)
MASS	STONE	1-10	75
MASS	BRICK	1-3	22
MASS	BRICK	3-6	38
MASS	CONCRETE BLOCK	1-5	20
MASS	CONCRETE WALL AND SLAB	1-10	22-38
MASS	CONCRETE "TILT-UPS"	1-3	18
FRAMED	WOOD	1-5	3
FRAMED	STEEL (HEAVY CLADDING)	3-50	30
FRAMED	CONCRETE/STEEL (LIGHT CLADDING)	3-100	2-8

Figure 1-32. Principal Building Characteristics.

4. Terrain Aspects of Buildings.

A guide to evaluating the terrain aspects of buildings follows:

- **Observation and fire.** Buildings on the edge of a city often provide better fields of fire than buildings in the interior. In the city itself, tall buildings with numerous windows often provide the best fields of fire, especially if the buildings have spaces between them.
- **Cover and concealment.** Buildings with thick walls and few, narrow windows provide the best cover and concealment. Roofs provide little protection; troops are better protected in the upper stories than right under the roof. (An exception to this rule is the parking garage.) Floor layouts with many small rooms provide more protection than floor layouts with larger rooms. Interior load-bearing walls provide good protection. Older walls that are not load bearing usually provide better protection than newer ones.
- **Obstacles.** Doors and fire barriers are common in commercial buildings. They become obstacles if they are shut and secured. Furniture and appliances can also become obstacles in a building. Barbed wire, mines, etc., can be used effectively inside a building because movement is canalized.
- **Key terrain.** Key "terrain" in a building includes entrances, hallways, and stairs. Troops that control those places control the building. An attacker, for instance, will be able to isolate the defender so that he cannot escape or be reinforced. A defender will be able to deny the building to the attacker, or make the seizure of the building so costly that the attacker is forced to bypass

it. Another key feature is a room which is large enough to permit firing of recoilless weapons, Dragons, or TOWs from the inside. Balconies and mezzanines with enough backblast area are particularly useful, as they provide an elevated platform for those weapons.

- **Avenues of approach.** The best way to attack a building is from the top down. The most important avenue of approach to look for is one that leads quickly to the top. If there is an outside way to the top that has cover and concealment, that is the best way into the building. Examples of such routes are fire escapes, drainpipes, or adjacent buildings. If there is no such route, attacking troops must use the stairs, get to the top of the building, and clear from the top down. Defending troops will likely control the elevator, so an attacker will find the stairs a better approach.

The preceding information on buildings is a guide only. You should evaluate your own buildings based on that information.

5. Intra-city Distribution of Building Types.

Certain types of buildings dominate certain parts of a city. This establishes patterns within a city. Analysis of the distribution and nature of these patterns has a direct bearing on military planning and weapon selection. [Figure 1-33](#) illustrates a distribution of building types.

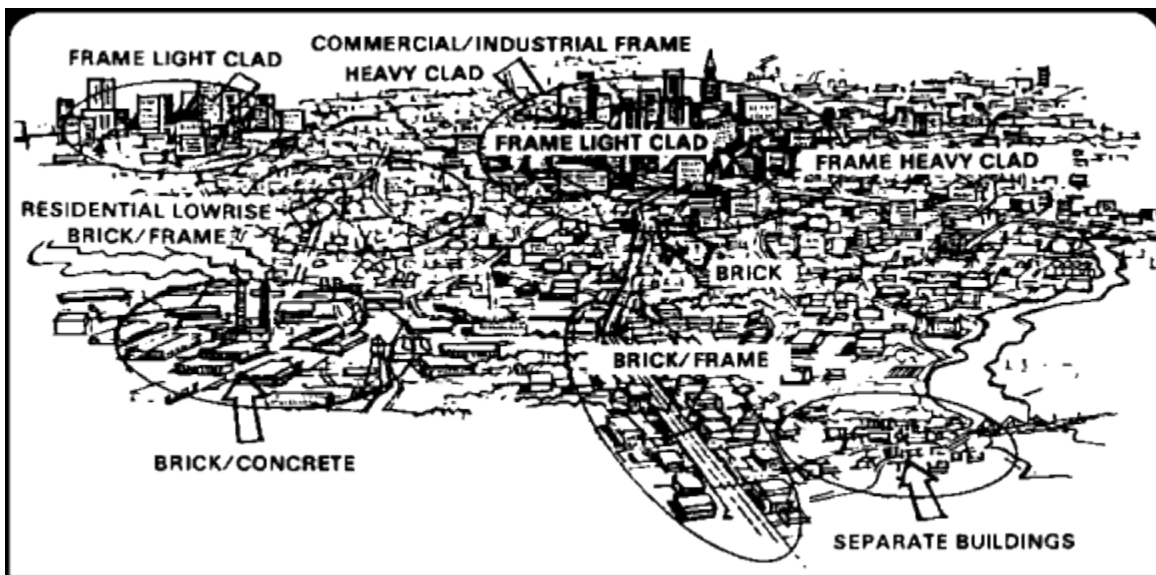


Figure 1-33. Building Types.

Mass-construction buildings are the most common structures in built-up areas, forming about two thirds of the total. Brick structures alone account for nearly 60 percent of all buildings, especially in Europe.

Steel and concrete framed multistory buildings have an importance far beyond their one-third contribution to total ground floor area. They occupy core areas (a city's most valuable land) where, as centers of economic and political power, they have a high potential military significance.

Open space accounts for about 15 percent of an average city's area. Most of that space is suitable for helicopter landings and takeoffs. Many open spaces are grass-covered and function as parks, athletic

fields, and golf courses; some are broad, paved areas. Spaces that could be used for airmobile operations are found mostly in these areas. The largest open spaces are associated with suburban housing developments where large tracts of land have been set aside for recreation. Those spaces are sometimes adequate for parachute assault.

6. Line-of-Sight Factors.

Streets serving areas composed mostly of one type of building normally have a common pattern. In downtown areas, for example, high land values result in narrow streets. Street widths are grouped into three major classes: 7 to 15 meters, found in such places as medieval sections of European cities; 15 to 25 meters, found in newer, planned sections of most cities; and 25 to 50 meters, where buildings are located along broad boulevards or set far apart on large parcels of land. When a street is narrow, observing or firing into windows of a building across the street can be difficult because an observer is forced to look along the building rather than into windows. When the street is wider, the observer has a better chance to look and to fire into the window openings ([Figure 1-34](#)).

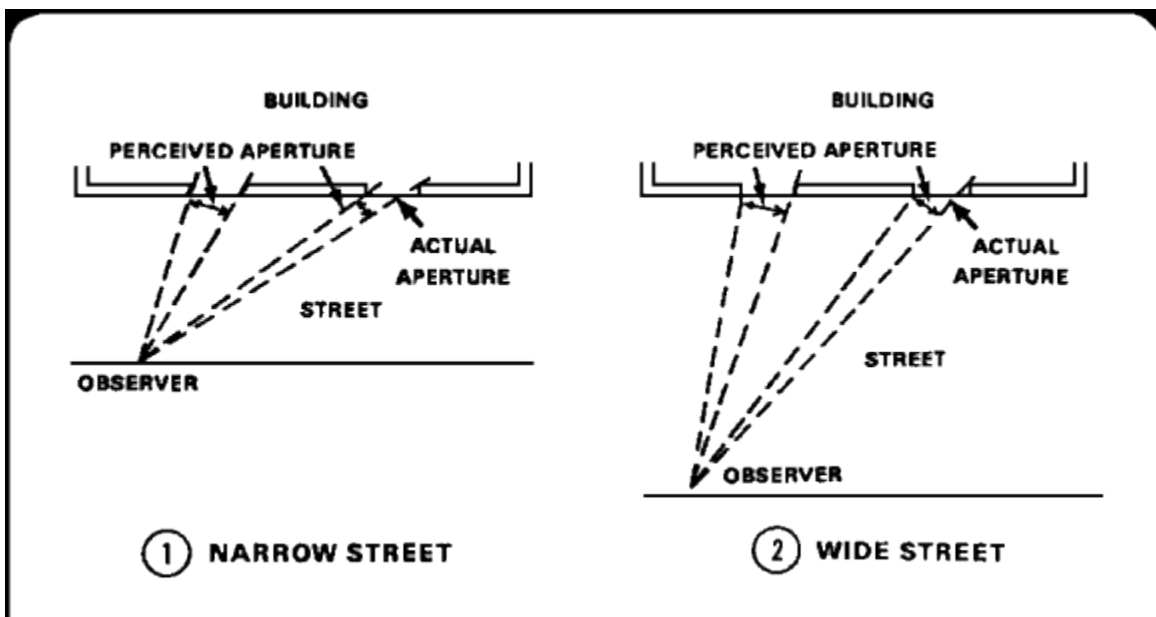


Figure 1-34. Line-of-Sight Distances and Angles of Obliquity.

7. Sources of Urban Information. Operations in urban terrain require detailed intelligence. Collecting, compiling, analyzing, and applying the needed information takes time. You should have the following material for planning operations.

- **Maps.** Tactical maps do not show manmade features in enough detail for tactical operations in urban terrain. However, they do show the details of terrain adjacent to urban terrain. Tactical maps should be supplemented with current aerial photos and local city maps.
- **Aerial photos.** Aerial photos provide you with details needed for planning. Photo coverage should include adjacent open terrain. It should be a mixture of vertical and oblique photos. A map grid, preferably 1:25,000, should be superimposed on vertical photos to improve their usefulness. For maneuver control and fire support, buildings, streets, and open areas should be identified on the map or photo using a numbering or lettering system.

8. Characteristics of the Defense.

The characteristics of the defense do not change on the urban battlefield. To apply them, you must understand the characteristics and components of urban sprawl, the advantages and disadvantages they offer, and how they impact on the capabilities of units and weapons during the conduct of the defense.

Understand the Enemy. When planning an urban defense, you must place yourself in the enemy's position, view the battlefield from his perspective, and fit his concepts, formations, and weapons to the terrain. This estimate enables you, as the defender to narrow the list of tactical options available to the attacker and identify his most probable courses of action.

See the Battlefield. Once you have organized the defense to counter the variety of attack options available to the enemy, you must aggressively seek to learn where the enemy is, how he is organized, which way he is going, and in what strength.

Although the characteristics of urbanized terrain may complicate the intelligence collection effort, the advantage lies initially with the defender. You must know the terrain over which you will conduct the defense. Reconnaissance, surveillance, and target acquisition resources must be applied as far forward as possible along likely avenues of approach to provide data to higher commanders.

Security forces operating from covered and concealed positions in depth complement electronic warfare support measures and tactical imagery activities by limiting the enemy's ground reconnaissance and infiltration capabilities.

On the urban battlefield, the attacker must forfeit, at least in part, the advantages of cover and concealment in order to move and mass; his routes of advance are limited and more clearly defined, enhancing the defender's target-surveillance capability; and he must use increased communications to coordinate the concentration of his forces, which reduces his ability to achieve surprise.

You as the defender must use your knowledge of the terrain and enemy to see the battlefield more accurately than the enemy, to prevent surprise, and to maximize reaction time for maneuver forces.

- **Concentrate at the Critical Times and Places.** The ability of the defender to concentrate rapidly throughout the battle area may be limited by restrictive terrain. In order to maintain a favorable mobility differential over the attacker, you must use your knowledge of the terrain. Routes must be selected, reconnoitered, and prepared for the forward and lateral movement of forces to be concentrated. The obstacle value of the urban terrain complex must be reinforced to slow the attacker.

Detailed movement data and explicit traffic control plans are essential. Lines of communication which are dependent on bridges, overpasses, or tunnels should not be used unless suitable bypasses are available. Weather or land usage patterns, as well as other manmade features, may limit the mobility of armored and mechanized forces. Greater reliance must be placed on an initial positioning of forces which accepts risk zones along the least probable avenues of approach. These zones may be covered primarily by air or ground screening forces and fires. On urbanized terrain, it is more difficult to recover from an erroneous decision which concentrates maneuver elements too early or at the wrong place. In this maneuver-restrictive environment,

increased emphasis on the use of artillery and attack helicopters as the first increments of concentration is required. As the battle progresses, your intimate knowledge of the terrain is used to maintain the mobility advantage.

- **Fight as a Combined Arms Team.** A detailed analysis of the urban-terrain complex provides the basis for allocating and organizing available forces to accomplish the defensive mission. Cross-reinforcement of maneuver elements will normally be required in order to match unit capabilities to the terrain mix. In the more open portions of the urban environment, armored and mechanized forces may play the dominant role. As the density of manmade features increases, the employment of mechanized or dismounted infantry, supported by armor and engineers, becomes increasingly important. If it is necessary to fight within a built-up area, the role of infantry supported by other arms becomes dominant. Field and air defense artillery, air cavalry, and attack helicopters are employed throughout the battle area to maximize the combined arms team's effectiveness, multiply its combat power, and enhance its survivability.
- **Exploit the Advantage of the Defender.** The already significant advantages of the defender become more pronounced on the urbanized battlefield. A common threat running through the discussion of the application of these fundamentals is the defender's familiarity with the terrain. Every action by the attacker is made more difficult because he must feel his way through this complex of manmade and natural terrain features. You can prepare the ground in advance, build and reinforce obstacles, and select firing positions and observation posts, many of which require improvement only. You can reconnoiter and improve routes between battle positions to shift forces and to supply them. Mutually supporting positions are often readily available. This pattern of favorable positions should enable you to strike the enemy repeatedly, slowing and disrupting him, inflicting losses and making him vulnerable to multiple, violent, local counterattacks. In many areas, terrain restrictions may enable attacks by fire alone.

9. How the Threat Unit Attacks.

Threat force structure and offensive tactics incorporate the concepts of mass, maneuver, and speed. Daily offensive rates of advance of 60-100 kilometers are expected during nuclear operations, and 30-60 kilometers under conventional conditions. To achieve these significant rates, to maintain offensive momentum, and to avoid presenting lucrative targets for nuclear weapons, speed and bypass operations are emphasized in overcoming natural and manmade obstacles.

When it is necessary to attack a built-up area, the following basic concepts govern the deployment of forces at division level:

- A surprise attack from the line of march, based on detailed advanced reconnaissance, is the preferred form of attack.
- Deliberate attacks from positions in contact may be launched if initial operations fail to make progress.
- Day and night attacks are used to maintain constant pressure on the defender.
- Smoke, darkness, and limited visibility conditions are exploited to conceal movement.

- Command and control is decentralized to the maximum extent possible.
- The combined arms team is integrated at motorized rifle company level.

The decision to attack a city or town may be based on tactical, strategic, or political considerations; and it is normally made at Army level or above. Threat forces may attack built-up areas to:

- Secure political, industrial, logistical, and communications facilities.
- Destroy defending forces within a built-up area.
- Gain passage through an urban area that cannot be bypassed.

The results of urbanization and its effects on offensive operations are recognized and planned for by Threat commanders. [Figure 1-35](#). shows how they classify built-up areas by using population and perimeter size. Their doctrine stresses that offensive formations attacking across highly developed regions may encounter at least one large built-up area every 40 to 60 kilometers, with one or two small built-up areas contained in every 200 to 300 square kilometers of battle area. The numerous small villages and clusters of structures that restrict and even block avenues of approach are treated as potential strongpoints to be isolated and neutralized or destroyed by lower-level units.

POPULATION	SIZE CLASSIFICATION	ESTIMATED PERIMETER
100,000 or more	Large	more than 25 kms
50,000 to 100,000	Average	15 kms to 25 kms
less than 50,000	Small	less than 15 kms

Figure 1-35. Classification of Built-Up Areas.

10. Surprise Attack.

A surprise attack envisions a rapid, bold movement from the line of march by a strong advance detachment to secure an undefended or lightly defended built-up area. It seeks to avoid a costly, protracted street-by-street, house-to-house battle and permit attacking forces to continue beyond the area without reducing offensive momentum. The surprise attack seeks to preserve vital facilities such as bridges, railroads, airfields, key industrial complexes, and utilities.

[Figure 1-36](#). illustrates how a motorized rifle division (MRD) might conduct a surprise attack with a reinforced MR battalion (MRB) in the role of the advance detachment. The size of an advance detachment is determined by the size of the built-up area and expected resistance.

The advance detachment moves rapidly and attempts to avoid contact with defensive forces on the approaches to the objective. If little or no resistance is encountered, the advance detachment seizes the most important objectives (buildings) and key streets, splitting the area into isolated pockets of

resistance, and destroys them piecemeal. Hasty defenses are organized to defeat counterattacks by the defending forces or to destroy defenders attempting to escape through the built-up area.

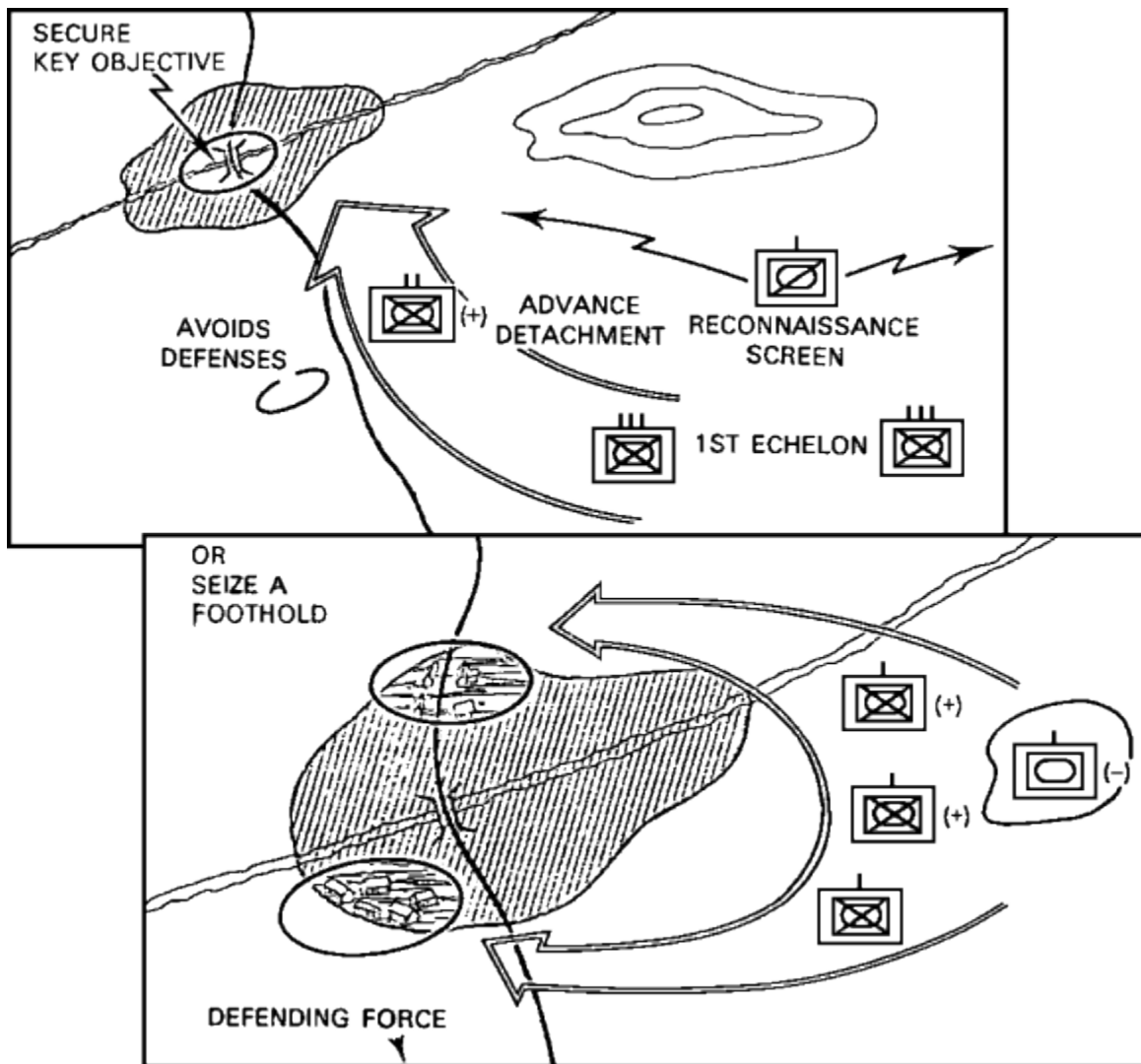


Figure 1-36. Surprise Attack.

Airborne or helicopter-landed forces may support the advance detachment by sealing off flanks or the rear of the objective. These forces may also be employed as the advance detachment around or in the built-up area. An advance detachment operating outside the range of forward artillery receives intensified reconnaissance and close air support from high-performance aircraft and helicopter forces.

If the surprise attack fails, the advanced detachment is normally directed to seize a foothold in the outskirts or to seize an adjacent key terrain feature and wait for the main body to arrive.

11. Deliberate Attack.

A deliberate attack is conducted when the surprise attack has failed or when intelligence indicates a city is well defended. This attack involves larger forces, requires more detailed planning, and has a greater weight of artillery, mortar, and rocket fires than a surprise attack. The deliberate attack is characterized by:

- Isolation of the objective.
- Extensive reconnaissance.
- Intense pre-assault bombardment.
- Assaults to secure a foothold and key objectives.

- **Reconnaissance.** Advanced reconnaissance activities include the study of large-scale maps, aerial photographs, and background intelligence reports. These data are updated by tactical intelligence from long-range reconnaissance patrols, agent reports, and electronic intelligence. Heliborne and airborne units may supplement ground reconnaissance and are normally targeted against specific key points in the urban area.

Reconnaissance functions are also frequently conducted by infiltrators disguised as refugees. Infiltrators or reconnaissance detachments may operate in the objective area for several days before an assault. Active reconnaissance may include the use of local residents to provide current essential information of the defender's activities. Raids by reconnaissance teams may be mounted for the purpose of capturing prisoners and documents. In some cases, raid/reconnaissance teams may be tasked to destroy selected critical facilities and defending forces prior to a deliberate attack.

Reconnaissance tasks include the determination of:

- Defensive dispositions on approaches to objectives.
 - Covered positions leading to flanks or rear of the objective.
 - Location and strength of defensive strongpoints.
 - Main routes through the built-up area.
 - Key objectives (buildings) that dominate the area.
 - Underground passages that can be utilized by assaulting forces.
 - Command post, reserves, weapon positions, and supply locations.
- **Isolation.** [Figure 1-37](#) depicts first-echelon regiments of a motorized rifle division (MRD) isolating an objective area in order to deny reinforcement/resupply of defenders and block escape routes. Occasionally, an intentional exit may be permitted to entice defenders into open terrain where they can be attacked. After isolating the area, second-echelon forces may conduct a siege operations to avoid a costly direct assault and destruction of facilities needed to support future operations.

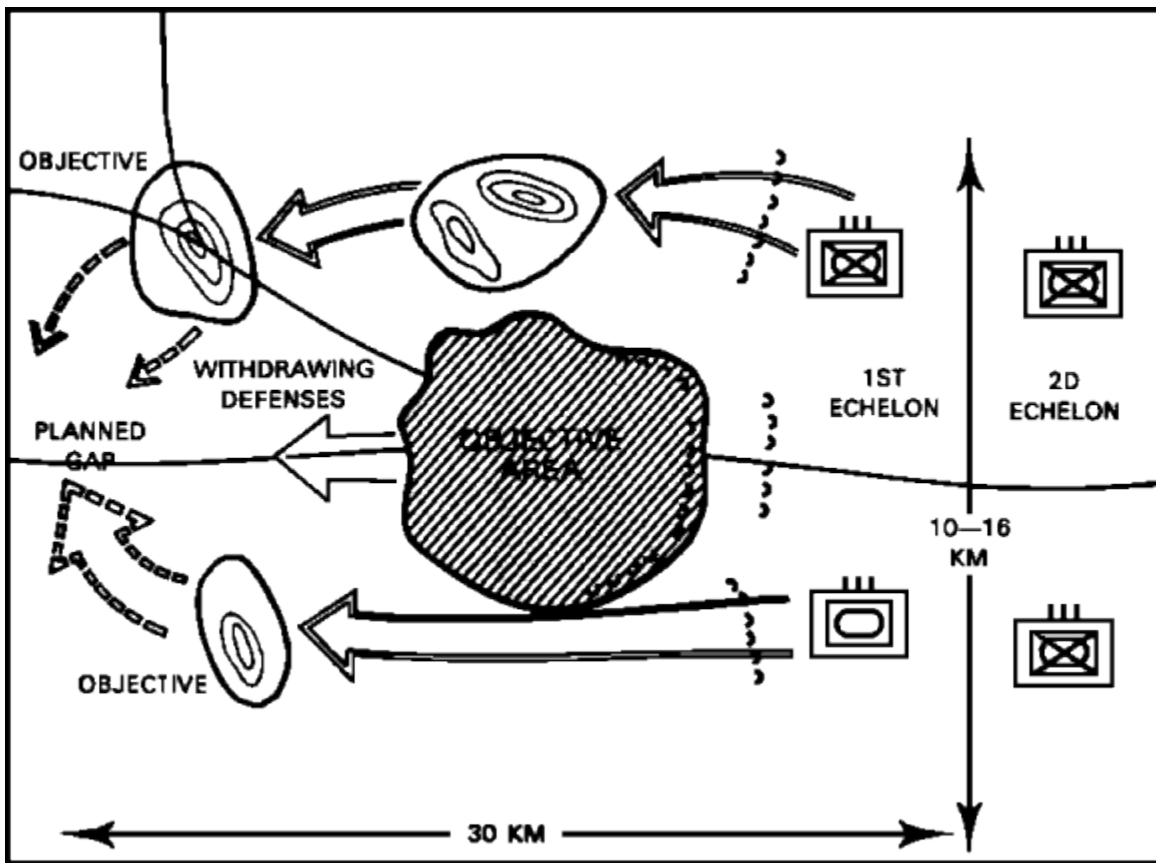


Figure 1-37. MRRs Isolating an Objective.

- **Bombardment.** The deliberate attack is normally preceded by howitzer, mortar, rocket, and air bombardment. The intensity of the preparation is determined by the strength of defensive forces, the type building construction, and the density of fires required to suppress observation and fires.

First priority of fires is allocated to the main attack to destroy antitank weapon positions and strongpoints on the area's edge. Artillery attached to assaulting units normally does not participate in the bombardment, but is reserved for direct fire employment against strongpoints on the outskirts and for support within the built-up area.

Other goals of the bombardment are to destroy or disrupt:

- Communications.
- Heavy weapon positions.
- Command posts.
- Tall structures that permit observation.
- Troop emplacements.

Threat forces fully appreciate that heavy bombardments may affect their mobility, but consider reduced mobility an acceptable trade-off for destruction of defending forces. Incapacitating or

non-persistent lethal chemical fires may be employed during bombardment to inflict casualties and preclude destruction of key facilities.

Smoke will normally be employed during artillery preparations to suppress the defenders while threat forces negotiate obstacles on the approaches and within the built-up area.

- **Assault.** Habitually, simultaneous attacks are made on the flanks and rear to capture specific objectives and to splinter defenses. Frontal assaults are avoided and will be conducted only when an objective cannot be isolated or flanked.

During or immediately after preparatory fires, engineers move forward under the cover of smoke and high explosives to neutralize barriers and breach minefields on routes into the city. First-echelon assault groups attack to secure a foothold 2-3 blocks in depth. After securing the initial foothold and rupturing the outer defenses, the first echelon may continue to attack, or the second echelon is passed through the foothold and attacks along designated routes from one objective to another.

The attack within the built-up area is characterized by bold, rapid movements to secure assigned objectives ([Figure 1-38](#)). Buildings along the route are not routinely searched or secured unless resistance is strong. Bypassed defenders are left for elimination by following echelons or the reserve ([Figure 1-39](#)). If the leading echelon is stopped or slowed, the following echelons or reserve may be committed around engaged forces and continue to the objective.

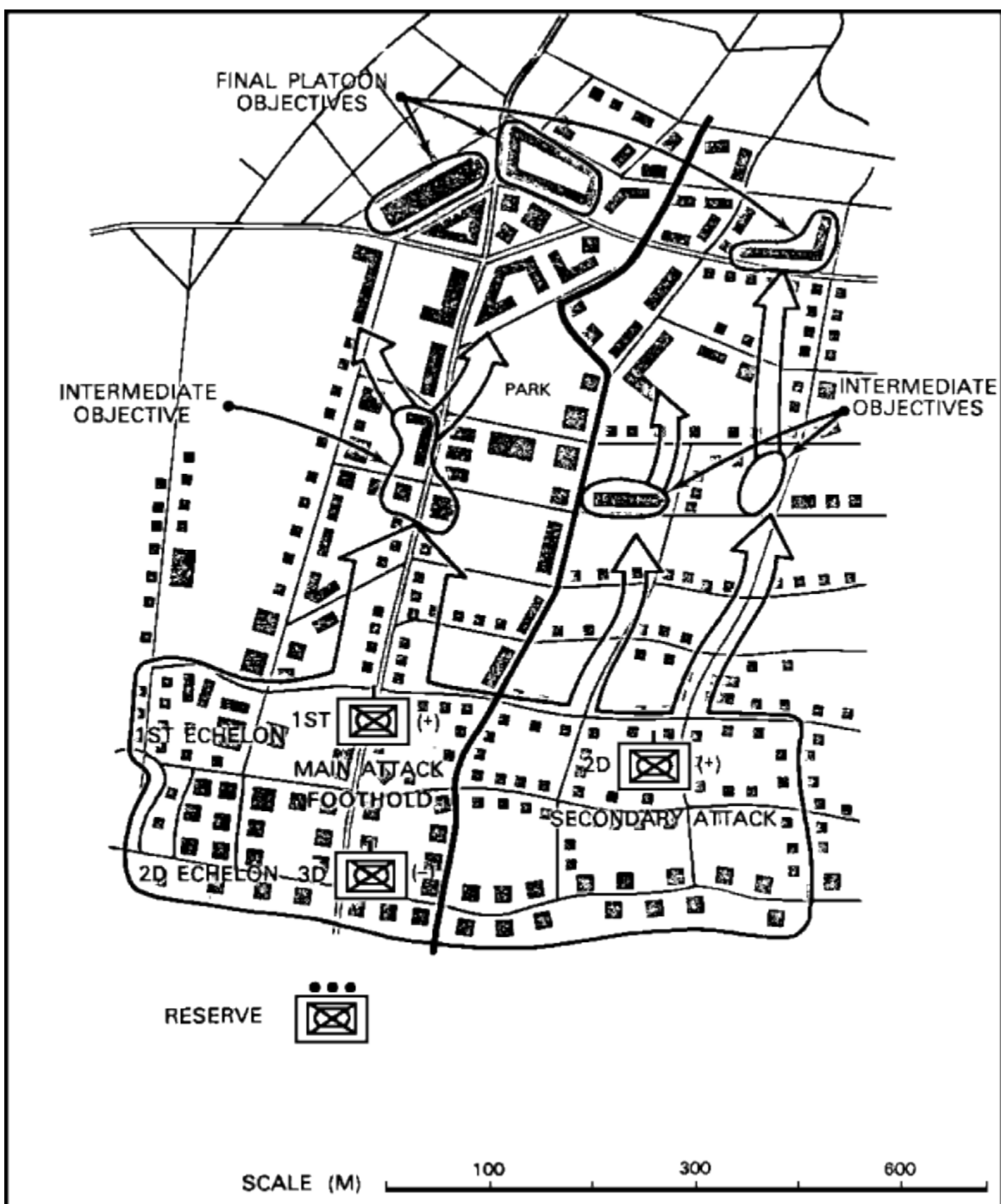


Figure 1-38. MRB Attack in Built-Up Area.

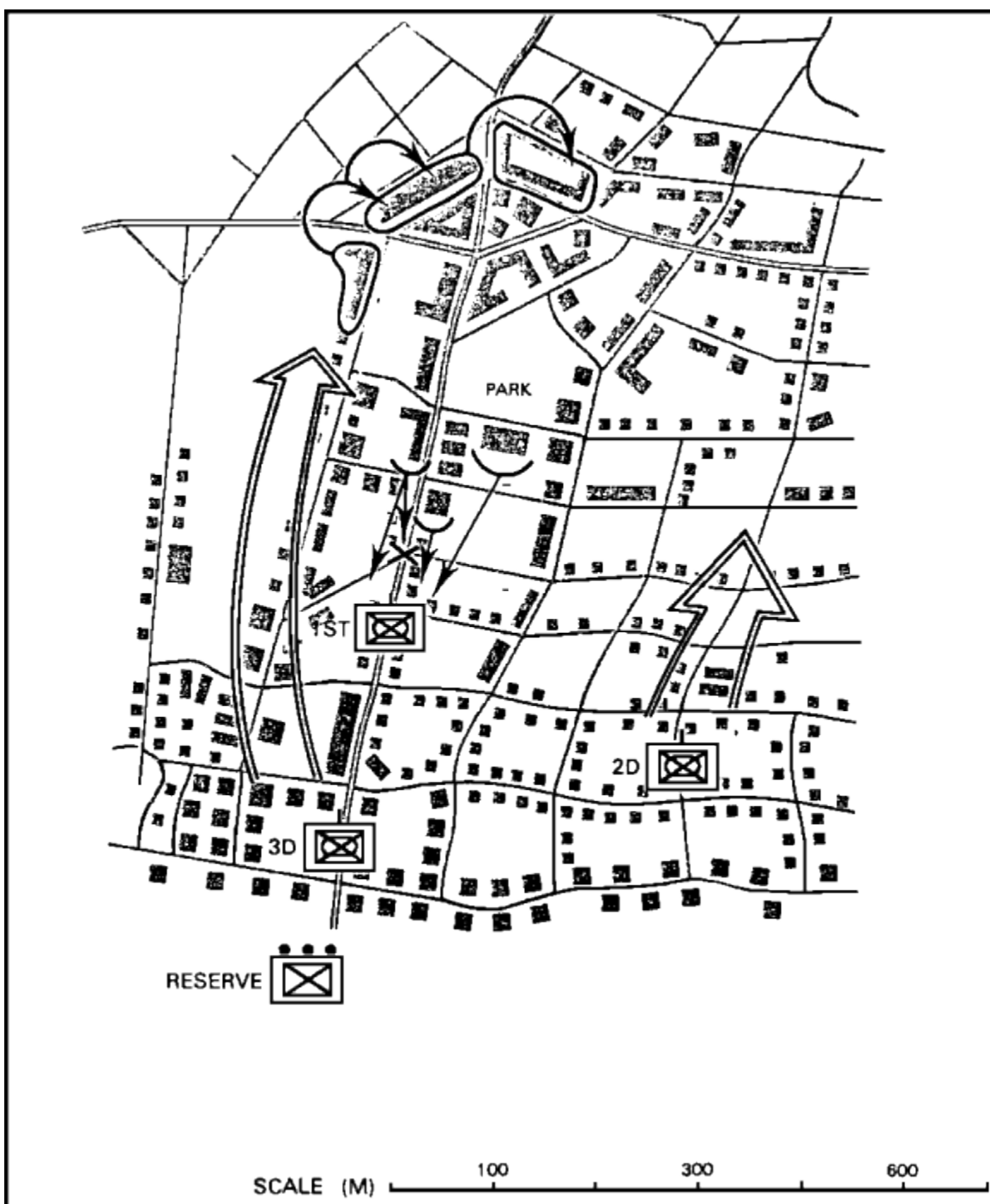


Figure 1-39. 2d Echelon Committed Around Engaged 1st Echelon.

Detected weaknesses in the defense are exploited by aggressive mounted attacks. Infantry mounted on tanks, in BMPs, or trucks fire while moving rapidly along streets to assigned objectives. Tactical doctrine stresses the use of underground routes in the attack. Such routes that cannot be used are blocked or mined to prevent infiltration into the attacking force's rear.

In the assault of an objective, Threat forces isolate the position by fire or by securing adjacent buildings. Isolation is stressed to prevent defenders from escaping to a rearward position and to deny reinforcement. Attached artillery and tanks are habitually used to suppress defensive fires

and to breach walls to provide entrances for assaulting infantry. Assaulting infantry avoid advancing along streets where they would be exposed to effective defensive fire. They seek surprise by attacking the objective from the flank or rear. Routes to the objective may consist of available underground passages such as subways, tunnels, and sewers, or passages blasted through intervening building walls. Once the assault of an objective begins, supporting fires shift to upper stories and to adjacent buildings. Assaulting infantry aggressively clear, in sequence, ground floor, basement, stairways, and each ascending floor. Once secured, the position is immediately prepared to repel counterattacks.

Round-the-clock operations are stressed to maintain uninterrupted momentum of the attack and to reduce casualties. Night operations against built-up areas are conducted to:

- Bypass outlying villages being used as battle positions.
- Seize initial objectives on the edge of the built-up area when there is a requirement to attack across open ground.
- Attack across open areas (broad streets, parks, between buildings).
- Seize strongpoints that are heavily defended.
- Reduce street obstacles that are well protected by mines and covered by fires.
- Exploit successes of daylight operations by keeping pressure on the defense.

Reconnaissance units may attempt to infiltrate night objectives to achieve detailed information and to guide assault forces to their objectives. The difficulty of night navigation in restrictive terrain and in the proximity of opposing forces requires a simple maneuver plan with close, easily recognized objectives. Assault groups normally attack in one echelon with units deployed on line. Surprise is achieved by withholding fire support until after the infantry assault has been detected. Once the attack has been unmasked, artillery illuminates the objective. Attached tanks and artillery join assault forces and suppress defensive fires with direct fires.

When surprise cannot be achieved, night assaults may be preceded by direct artillery/tank fires against strongly defended buildings. Direct support artillery and mortars seal off the objective area to prevent defenders from withdrawing or being reinforced. Illumination is fired to guide forces, illuminate objectives, and to dazzle the defender's night vision devices.

After securing assigned objectives and eliminating significant defensive opposition, assault groups normally establish defensive positions beyond the built-up area and prepare to continue the attack. Detailed clearance operations are normally passed to following units or to security formations.

12. Organization for Combat.

The size and composition of the force allocated to seize a built up area is determined by the area's size, shape, type of buildings, street patterns, and strength of defending forces. Attacking forces are not evenly distributed around the built-up area, but are employed over the most favorable avenues of approach. Generalized attack zones for motorized rifle units are:

Division 4 to 6 kilometers
Regiment 2 to 3 kilometers
Battalion 400 to 600 meters
Company 200 to 300 meters

[Figure 1-40](#) depicts the second echelon motorized rifle regiments of a motorized rifle division conducting a deliberate attack. The 1st MRR, designated as the main attack force, is moving with three motorized rifle battalions (MRBs) in column. This formation is normally employed when defenses are organized in depth or when the city is configured in an elongated pattern.

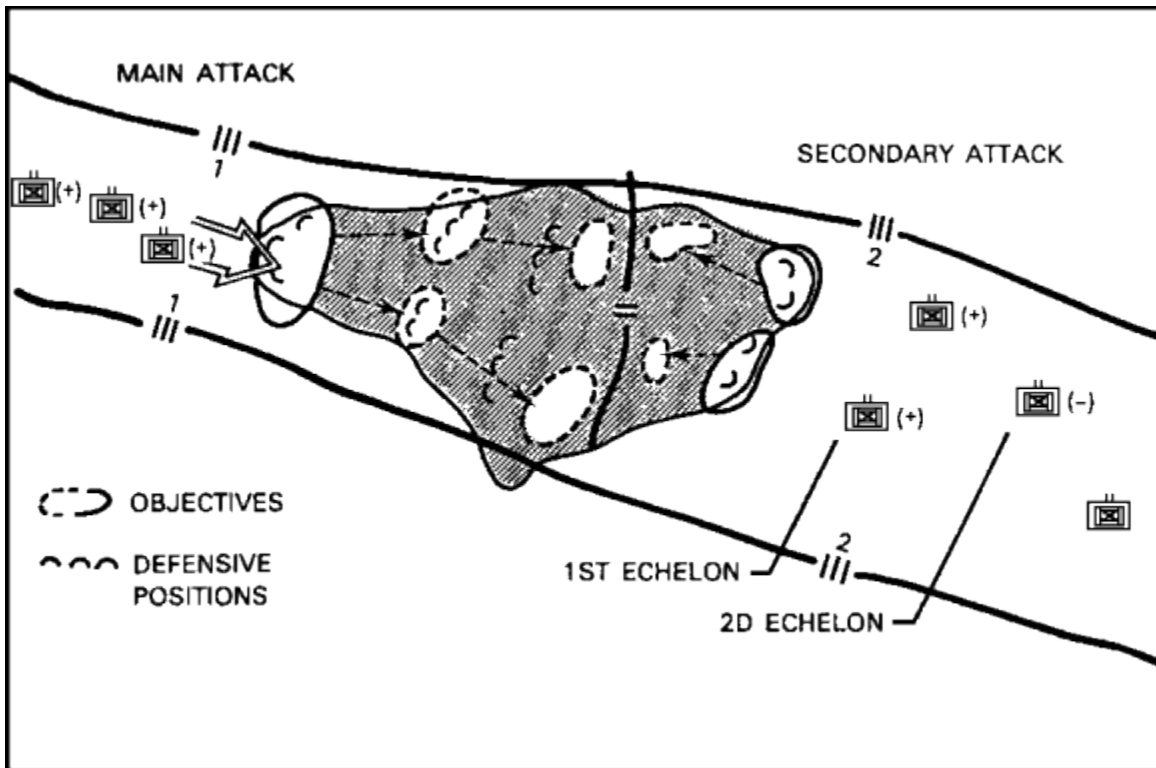


Figure 1-40. Motorized Rifle Regiments Conducting the Deliberate Attack.

The 2d MRR is organized with two MRBs in the first echelon, one MRB(-) in the second echelon, and a MR company as the reserve. This formation is normally employed when defenses are organized on the city's edge or when attacking a shallow built-up area.

The basic unit in built-up area warfare is the reinforced MRB. [Figure 1-41](#) illustrates a type first-echelon MRB (assault detachment) designated as the main attack force. The battalion is reinforced by attaching a tank company, a battery of SP artillery for direct fire, one company of engineers, and one NBC reconnaissance section. An additional artillery battalion is normally placed in direct support for indirect fire missions in the battalion's zone. Missions normally assigned to a MRB making the main attack in the first echelon include:

- Seize intermediate objective(s) on city's edge.
- Attack along primary (main) routes to secure deep objectives and key facilities in zone.

Second-echelon MRBs are also reinforced with tanks, artillery, and engineers. This arrangement provides for rapid replacement of the first echelon without time-consuming reassignment of units during the battle.

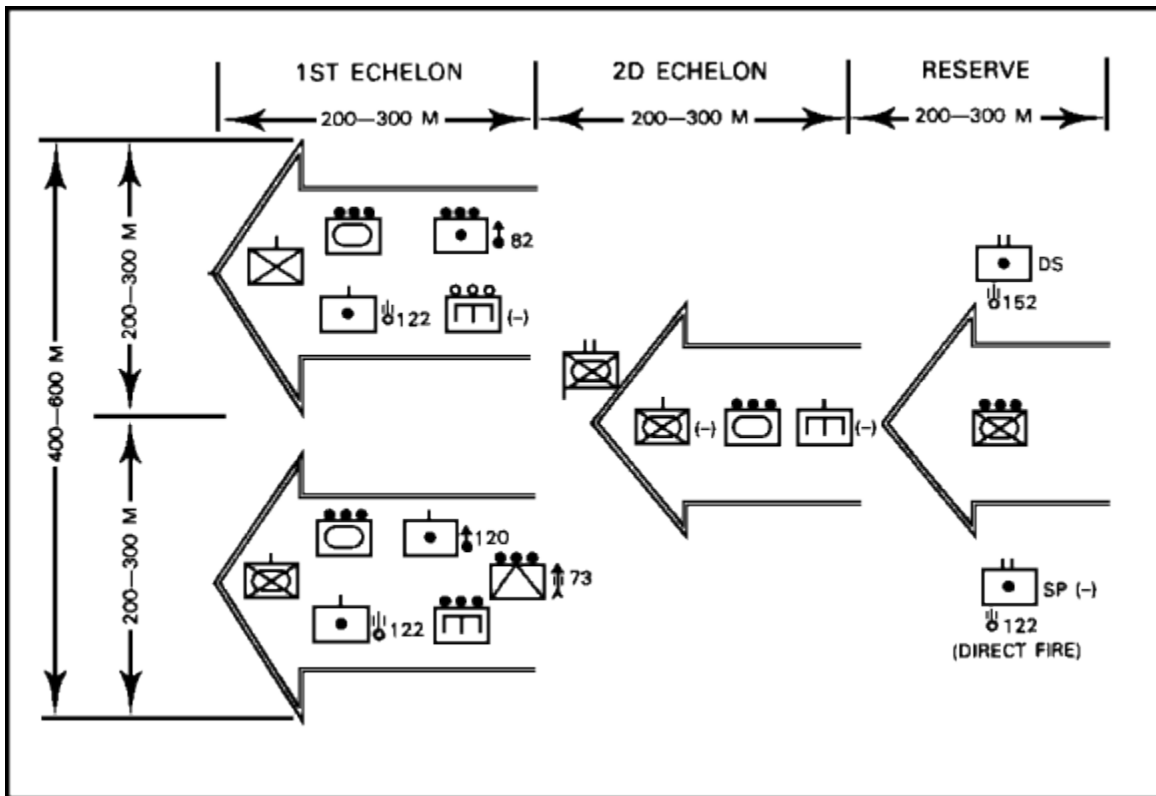


Figure 1-41. Attack of Built-up Area by Reinforced Motorized Rifle Battalion (Main Attack).

Missions normally assigned a second-echelon MRB include:

- Reinforce first echelon.
- Be prepared to assume first-echelon mission.
- Provide replacements to first-echelon units which have lost combat effectiveness.
- Reduce bypassed defense positions.

Reserve MRBs are prepared to:

- Pass through either echelon and attack to take advantage of a defensive weakness.
- Protect flank.
- Conduct firefighting and debris clearance missions as required.

Motorized rifle companies (MRCs) may be designated as assault groups. MRCs conducting the main attack are normally reinforced with a tank platoon, an artillery battery, chemical and flamethrower units, and an engineer platoon. Frequently, MRB antitank gun platoons will be attached to the MRC making the main attack.

Attachments to the MR company are further attached to platoons, providing each platoon with at least one tank or artillery weapon and a share of engineers. These attachments allow decentralized/independent operations by platoons in seizing specific objectives ([Figure 1-42](#)). Frequently, these attachments may be made down to squad level.

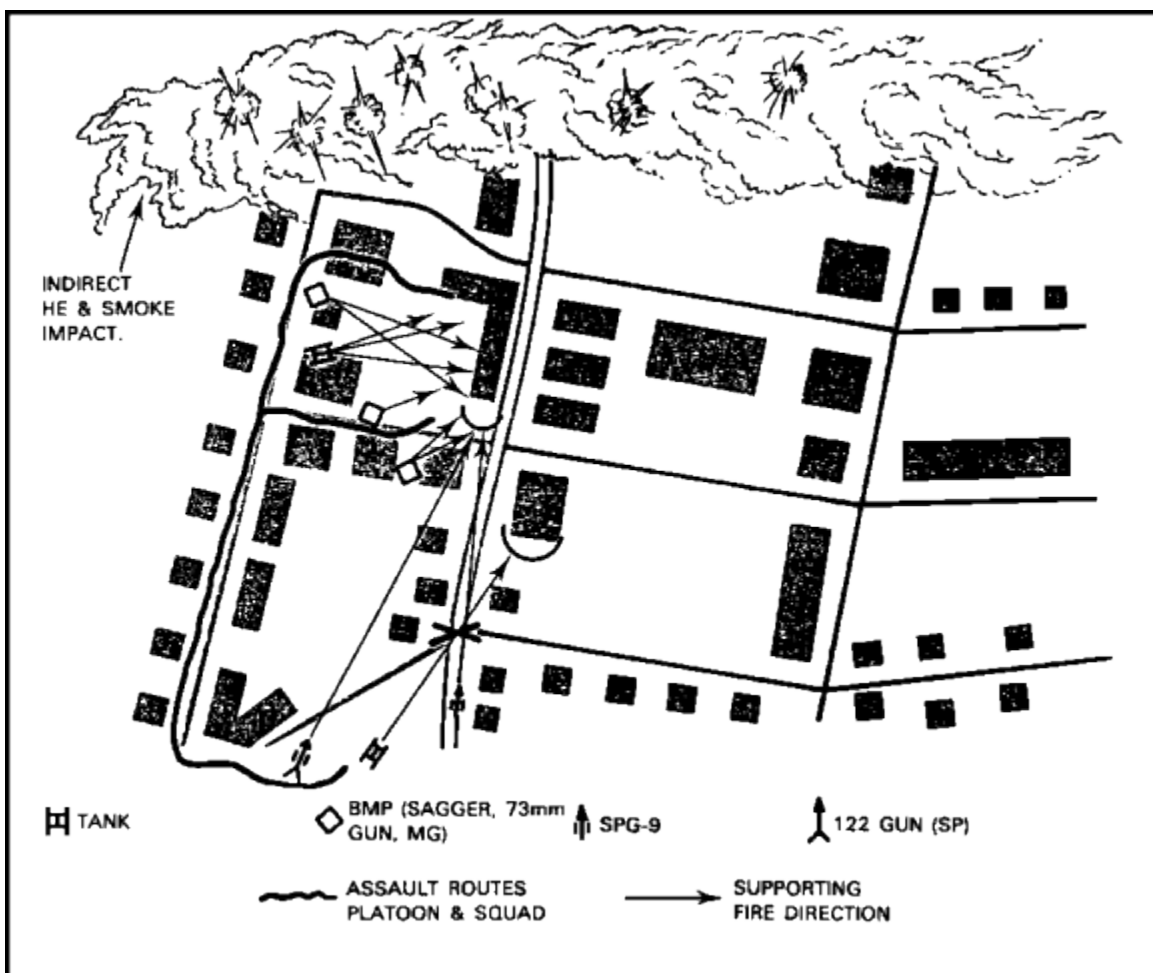


Figure 1-42. Motorized Rifle Platoon Assaulting Strongpoint.

● Combined Arms.

Tanks. Tanks supporting MR companies may be employed as a platoon, in sections, or singly with an MR squad. Generally, a rifle squad provides close-in security for each tank, relying on the tank for protection and fire support. Tanks also support the attack by firing on suspected positions, smashing barricades, and engaging opposing armor.

Artillery. The difficulty of centralized fire control and the decreased effectiveness of indirect fires within built-up areas is recognized. For these reasons, over 50 percent of the available artillery may be attached and employed in a direct fire role to create breaches in buildings, walls, and barricades. Within the built-up area, self-propelled (SP) artillery weapons are frequently attached to infantry platoons/squads. The artillery commander normally collocates with the MRB commander.

Mortars. Mortars cover avenues of enemy troop movements, such as street intersections and alleys. Mortar firing positions are placed behind walls or inside buildings close to their targets.

Engineers. Engineers are attached to MR platoons and squads with the following missions:

- Breach obstacles on approaches to the city.
- Clear passages through rubble and barricades.
- Destroy individual buildings.
- Block or clear underground passages.
- Clear or lay mines as required.

Division and Regimental Artillery. Massed fire from heavy batteries of the division and regimental artillery groups is used against large buildings, strong enemy fortified positions, and in a counterfire role. Other missions for these groups include interdiction and destruction of enemy supply installations, headquarters, and communication centers.

13. Basic Offensive Considerations.

Threat doctrine stresses the following offensive fundamentals which should be considered when planning the defense of a built up area.

Built-up areas not essential to overall success of offensive operations will be bypassed and isolated if possible. When an attack is required, Threat forces will attempt to secure key built-up areas by a surprise attack from the march before defenses have been established.

The deliberate attack is characterized by isolating the objective area, conducting an intense pre-assault air and artillery bombardment, and by multiple assaults on the flanks and rear of the area to be secured. Combined arms assault groups orient on securing objectives and will bypass and isolate centers of resistance. Detailed clearance of each building is normally assigned to follow-on units.

MR companies are reinforced with tanks, artillery, antitank guns, and engineers. MR companies are expected to operate independently. The majority of organic artillery is attached to assaulting units and employed in a direct fire role.

Underground systems are considered to be key avenues of approach. Tall structures that are likely observation posts are highpriority artillery targets.

The enemy will accept isolation of attacking units and heavy losses to secure assigned objectives and to maintain attack momentum.

14. Planning the Defense.

This portion of the subcourse describes US defensive doctrine for operations on urbanized terrain and provides detailed considerations to be applied by you during planning. You must also be familiar with defensive planning as outlined in organizational How-to-Fight manuals and understand how the enemy attacks.

15. Defensive Operations.

Commanders at each level must decide how best to integrate manmade features into their overall scheme. In some cases, you may be directed to defend a built-up area, a line of communications, or an industrial complex whose retention provides significant advantage within the framework of the defensive plan of a higher level commander. The decision to defend such an area may also be made because of specific tactical advantages accruing to the defender assigned responsibility for an area. In all cases, the elements of urban sprawl must be analyzed in conjunction with natural terrain in order to determine how to enhance weapons effectiveness to slow, block, canalize, and destroy the enemy.

Built-up areas, like forests, hills, or other terrain features, may be incorporated in the plan for the defense of an urban area in order to:

- **Control avenues of approach.** Avenues of approach in urban areas are frequently interrupted by built-up areas scattered across the terrain. These built-up areas may provide a portion of the defensive grid for the combined arms team. In some cases, the location of a built-up area on the urban terrain complex may effectively deny bypass to major elements of an attacking force. At lower levels of command, this may favor the use of villages or small towns as strong points. At the other extreme, major urban complexes may be so large that they cannot be totally avoided.
- **Act as a combat multiplier.** Built-up areas are obstacles to a mechanized force. Passage through such areas can be blocked, canalizing enemy forces into open terrain interlaced with antiarmor fires and reinforced with mines and other obstacles. When urbanization significantly restricts mounted maneuver or when sufficient mechanized forces are unavailable, the integration of the elements of urban sprawl into the defense may provide a combat multiplier for the defender.
- **Conceal forces.** Technological advances have significantly improved tactical imagery and sensor devices. However, when employed against built-up areas, their effectiveness is greatly reduced. In addition, urban features frequently offer cover and concealment to the defender with a minimum expenditure of preparation time. Such features may be suitable for use as battle positions within the overall defensive scheme.
- **Retain key transportation centers.** The requirement to shift and concentrate major combat forces and supplies rapidly over an extended battle area may demand the retention of the hubs of main road and railroad networks.
- **Deny strategic/political objectives.** Industrial or economic complexes may be incorporated in the defense for their strategic value, while political/cultural centers may provide psychological/national morale advantages.

Built-up areas will normally not be utilized as part of the urban defensive plan when:

- Sufficient combat strength is not available for defense.
- The built-up area does not support the overall defensive concept.
- Terrain adjacent to the built-up area permits the enemy to bypass it.

- Structures within the built-up area do not afford adequate protection for the defender.
- The complex is dominated by adjacent terrain that offers an attacker significant observed fire advantages over the defender.
- The built-up area is declared an "open city" for humanitarian and political reasons or to protect valuable structures.

Planners should seek to avoid combat within built-up areas while recognizing that this may not always be possible. They should also seek to integrate into the overall defensive scheme those built-up areas which provide the commander defensive advantages.

16. Planning Considerations.

Defensive planning on the urbanized battlefield follows the process described in organizational How-to-Fight manuals. The basic roles of the covering force, main battle, and rear areas remain unchanged. The following specific considerations assume added importance.

- **Organization of the Battlefield.** On the urbanized battlefield, the defender fits his forces to the ground by utilizing the terrain to take maximum advantage of its natural and manmade features. Urban sprawl adds strength to the active defense by providing covered and concealed positions and restricting the attacker's mobility and observation.

Dismounted infantry can contribute to this defense by occupying battle positions or strongpoints around which the mobile battle is fought. In restrictive urban terrain, dismounted forces may be required in order to find the enemy, deny him the ability to close without being detected, and then fight the close-in battle.

If the retention of a built-up area is required, the defense may assume the characteristics of a position defense organized in depth and supported by strong mobile forces.

- **Covering Force Area (CFA).** The urban area defense begins with mobile combined arms covering forces deployed well forward of the main battle area (MBA). Company team and task force battle positions are organized in depth to control approaches to the main battle area, with emphasis placed on using natural and manmade features which offer cover and concealment or restrict opposing force maneuver. Small villages and strip areas may be incorporated in the defensive scheme in the same manner as other terrain features.

Increased engineer support is required to reinforce the obstacle nature of the terrain and maintain withdrawal and attack routes. Mixed caliber artillery contributes to deception in this environment where it is difficult for the enemy to see the battlefield and assists the CFA commander in maintaining the continuity of the defense from successive positions. The air defense artillery umbrella must extend over the CFA to deny the enemy the use of aerial observation and attack assets. Air cavalry and attack helicopters should be employed throughout the CFA, taking advantage of the terrain which limits detection by ground surveillance and screens aerial maneuver. The transfer of the enemy by the covering force must not result in an easing of pressure or allow the enemy to gain momentum. Once detailed coordination has been

accomplished, the restrictive nature of the urban terrain complex, its obstacles, and readily available defensive positions may facilitate the actual hand off.

- **Main Battle Area (MBA).** As the defending commander, you must be aware of the impact that urbanization of the terrain within the MBA will have on your ability to defend. Consideration should be given to the restrictive or compartmentalized areas caused by the urbanization process and to the advantages or disadvantages which the areas may offer the defender. It is possible that some of these areas may fall within risk areas which provide the enemy with covered and/or concealed infiltration routes into the MBA. In such cases, responsibility for risk areas must be clearly delineated between adjacent units. If the urban terrain includes villages, small towns, and strip areas, it might be advantageous to incorporate these features within company/team or task force battle positions. Such features can provide excellent cover and concealment to defending forces and are frequently mutually supportable.

As previously noted, it may become necessary to designate a built-up complex within the MBA as critical to the defense of the urban area. When this situation arises, it is imperative to initiate the defense of the urban area as far forward as possible to facilitate the defense of the built-up area and to avoid a protracted combat-in-cities battle.

[Figure 1-43](#) portrays typical defensive sectors for company team organizations assigned a defend mission in various types of built-up areas. With less restrictive missions, these typical widths may be extended. Final sector dimensions are defined based on a detailed analysis.

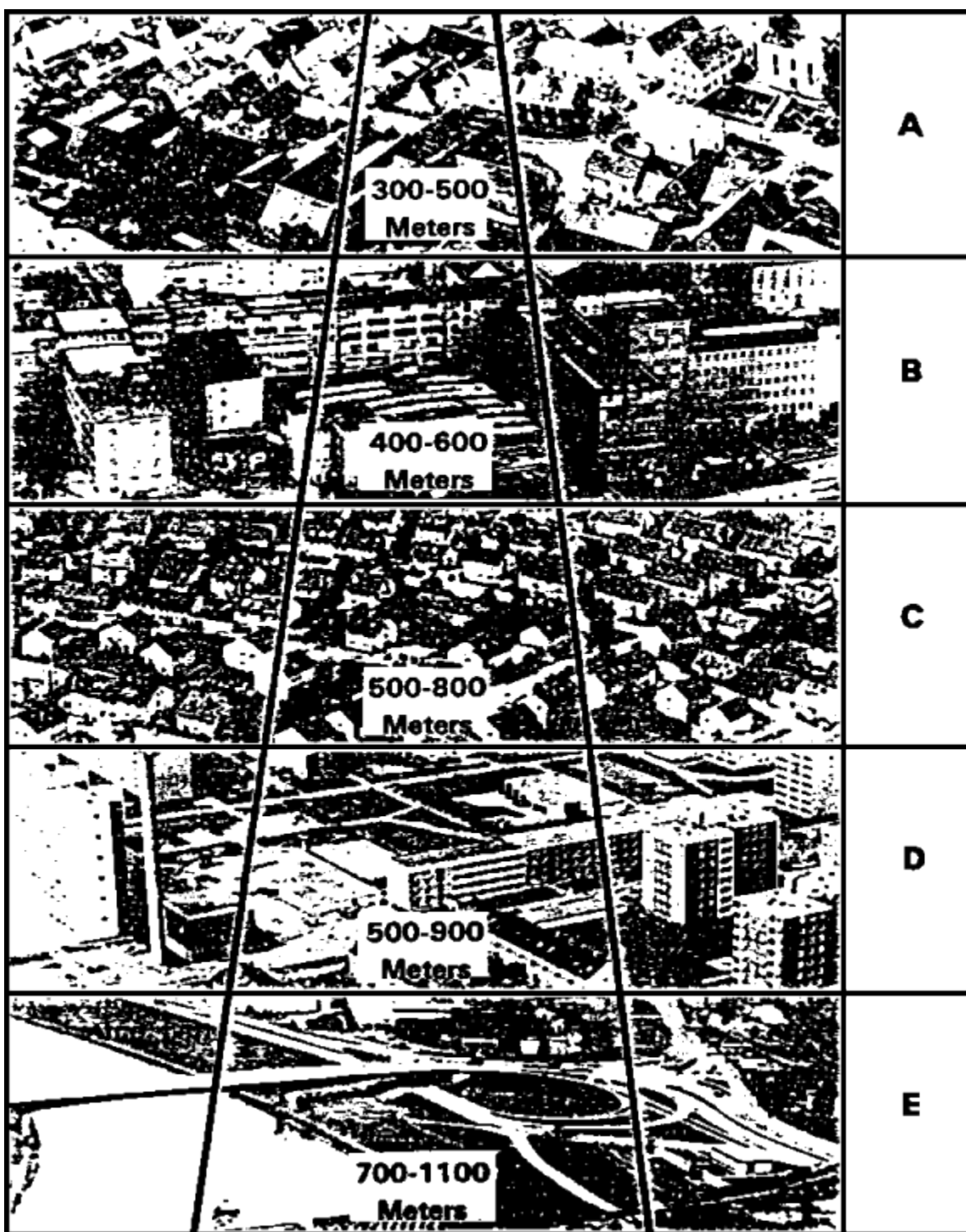


Figure 1-43. Typical Company Team Defensive Sectors by Type Built-up Area.

You should consider the potential value of urban features as obstacles to attacking forces. Frequently urban areas sit astride, or otherwise dominate, high-speed avenues of approach into and through the MBA. If urban areas cannot be bypassed easily, they may reduce the momentum of the enemy's attack and his ability to maneuver. In these instances, you must be prepared to capitalize on the situation. Conversely, you must also appreciate the limitations

which urban areas can place on your own ability to maneuver, particularly during active defense operations.

A primary concern to commanders defending a built-up area is to avoid becoming isolated by enemy forces. In planning the defense, you can normally make two assumptions concerning this matter. The first assumption is that although the built-up area may not occupy terrain which is dominant, it normally has dominant terrain adjacent to it on at least one side. The second assumption is that, doctrinally, the enemy will attempt to bypass and isolate a built-up area by securing the adjacent dominant terrain before the built-up area itself is directly attacked. Therefore, you must integrate surrounding dominant terrain into your defensive scheme in order to preclude being bypassed and isolated.

Should the defense of an urban area develop to the point that operations within the built-up area itself are required, you must consider the nature of the built-up area and the characteristics which are unique to fighting there. The nature of the built-up area includes such aspects as the size of the area, the type of construction used for buildings, the density of the buildings, and the street pattern or layout of the built-up area. These aspects may vary considerably from one part of the built-up area to another, but each will impact in some way on the manner in which the defense of the area is conducted.

Built-up areas generally degrade command and control by reducing the capability of direct observation of subordinate units and by interfering with radio communication. Zones of responsibility are compressed into relatively small areas with shorter unit frontages.

Maneuver room is restricted, placing a greater reliance on infantry-heavy forces. Fields of fire and observation are also reduced, leading to violent, independent small-unit actions at close quarters. The battle within a built-up area can be expected to be multidimensional. It may be fought simultaneously above the ground, on roof tops in buildings, at street level, and below the ground in sewers and subway systems.

- **Rear Area.** The functions and organization of the division rear area are not significantly changed in an urban environment. Within larger urban area, mobility may be restricted by damage to and along lines of communication from air or artillery attacks. Detailed traffic control may be required to maintain the forward and rearward flow of combat service support elements. Additionally, the ever-present threat of attack by small elements infiltrating through the MBA or from air assault forces increases. Internal security and self-defense responsibilities expand because of the limited availability of and reduced mobility of reserves.

When the MBA defense is organized around brigade battle areas, security during logistical movements and for combat support units located outside these battle areas becomes increasingly critical. If brigade support areas are located behind battle areas, additional coordination may be required to establish priority for security and movement between the various brigade, division, and corps support elements.

- **Limited Visibility Operations.** When defending on the urban battlefield you must be prepared to counter enemy attacks launched at night or under other conditions of limited visibility. Within

built-up areas, the attacker may use such conditions to attempt to extend his reconnaissance, infiltrate friendly positions, cross open areas, or secure limited objectives. To help defend against such operations, the following basic measures may be employed:

- Shift defensive positions and crew-served weapons to alternate positions just before dark to reduce chances for surprise and to deceive the enemy as to their exact location. A squad or fire team can often be shifted to an adjacent building and provide the same cover on an avenue of approach.
- Occupy or patrol open areas between units which are covered by observed fire during daylight.
- Employ radar, remote sensors, and night observation devices on the best night avenues of approach. Use nuisance mines, noisemaking devices, tangle foot tactical wire, and listing posts (LPs) on secondary avenues of approach for early warning.
- Place LPs for security outside of buildings being used as strongpoints or battle positions.
- Plan illumination over the entire sector, integrating artillery/mortar flares, trip flares, and hand-projected flares.

- **Command and control.** Urban warfare places a heavy strain on the command and control apparatus. Command of subordinate units and the control of fires is complicated by restrictive terrain, the proximity of opposing forces, reduced communications capabilities, and the numerous small, isolated battles that may be fought simultaneously throughout the urban complex.

The primary control measures used are battle areas, battle positions, and sectors. Phase lines, checkpoints, and restrictive fire control measures may also be used to simplify reporting and control.

Timely and accurate situation reports are more critical to the commander in this environment. Distances between forces on the urban battlefield are reduced; and unreported breakthrough may splinter defensive cohesion and seriously jeopardize the entire defense. You must constantly be informed of critical actions to enable rapid assessment and reaction. You should be located well forward and within FM (secure) ranges of committed forces.

An in-depth, well-thought-out concept of defense provides the latitude for repositioning uncommitted units and quickly integrating them into the defense.

Achievement of an integrated, flexible, and responsible command and control system will require:

- A detailed, but simple, centralized concept for conducting the defense. Subordinate units will be given restrictive missions and finite control measures where necessary.
- Although told exactly what to do-how to accomplish assigned tasks will be left to subordinate units (decentralized execution).

- Decentralized execution may require attachment of combat support and combat service support assets.
- Commanders ensure accomplishment of assigned tasks in an orderly fashion by establishing priorities and deadlines.

17. Defense of Urban Terrain By US Forces.

The defense of an urban area should be organized around key terrain features, buildings, and areas which preserve the integrity of the defense and provide the defender ease of movement. You must organize your defense taking into account such characteristics of urban terrain as fire hazards, obstacles, communications restrictions, cover and concealment, movement difficulties, and fields of fire and observation.

18. Defensive Movement.

- **Avenues of Approach.** You must not only consider the conventional avenues of approach into and out of the city but also the avenues within built-up areas that are above and below ground level. You normally enjoy an advantage in that you know the city and are able to move rapidly from position to position through buildings and underground passages.
- **Cover and Concealment.** You should prepare positions using the protective cover of walls, floors, and ceilings. Individual soldiers should constantly improve positions using all available materials. When you have to move, you can minimize your exposure by:
 - using prepared breaches through buildings,
 - moving through previously reconnoitered and marked underground systems,
 - using trenches, and
 - using the concealment offered by smoke and darkness to cross open areas.

The attacker must advance to accomplish his mission. To do so, he must cross streets and open areas between buildings where he is exposed to fires from concealed weapon positions.

- **Obstacles.** A city itself is an obstacle since it canalizes and impedes an attack. Likely avenues of approach should be blocked by obstacles and covered by fire. Using wire entanglements to reinforce antitank obstacles will hinder the attacker as he attempts to breach them. Tank obstacles are improvised by blowing craters, demolishing walls, derauling or overturning streetcars or railroad cars, and making maximum use of rubble and debris. The mining and booby-trapping of obstacles, particularly rubble and debris, is an effective deterrent to breaching operations. Nuisance mines and boobytraps, when authorized, can be very effective when placed in unoccupied buildings.

19. Fields of Fire and Observation.

You must position weapons to obtain maximum effectiveness and mutual supporting fire, permitting long-range engagements out to the maximum effective ranges, when possible. Artillery forward

observers (FO) should be well above street level to adjust fires on the enemy at maximum range. When possible, fires are preregistered on the most likely approaches.

This permits fires to be shifted rapidly to threatened areas. FPFs should be preregistered.

20. Communications Restrictions.

Wire is the primary means of communications used to control the defense of a city. Radio communications in urban terrain are normally degraded by the structures. Because of that and for security reasons, radio is an alternate means of communications. Messengers can be effectively used as an additional means of communications. Visual signals may also be used to add to other communications means, but are generally ineffective due to the screening effects of buildings, walls, etc. Signals must be prearranged, widely disseminated, and thoroughly understood by all assigned and attached units before they are used. Increased noise-another characteristic of urban combat-makes the effective use of sound signals especially difficult.

21. Fire Hazards.

Your detailed knowledge of the terrain permit you to avoid areas that are likely to be fire hazards. All cities are vulnerable to fire, especially those with many wooden buildings you can deliberately set fires to:

- disrupt and disorganize the attacker,
- canalize the attacker into favorable engagement areas, and
- obscure the attacker's observation.

22. Preparation for the Defense.

Planning and organizing the defense of an urban area follows the same general procedures and principles used in other defensive operations.

In developing a plan for the defense of an urban area, you consider METT-T, with special emphasis on fire support, preparation time, work priorities, and control measures.

Planning for the defense of a city must be detailed and centralized. However, since many actions in urban fighting are conducted by small units, control is decentralized during the actual conduct of the defense.

23. Mission.

As in other operations, you must receive, analyze, and understand the mission before any extensive planning can take place. You may receive the fragmentary form, in any case you must analyze all specified and implied tasks.

24. Enemy.

You must also analyze the type of enemy you will encounter. If the attacker is primarily dismounted infantry, then the greatest danger is allowing him to gain a foothold. If the attacker is primarily armor

or mounted motorized infantry, then the greatest danger is that he will be able to mass direct fire and destroy your positions.

Intelligence gathering for urban defensive operations is not limited to only studying the enemy. Commanders must emphasize the acquisition and use of all intelligence. The items of intelligence peculiar to urban combat are:

- Street, water, and sewer plans.
- Key installations and facilities.
- Key civilians.
- Civilian police and paramilitary forces.
- Communications facilities and plans.

To supplement the intelligence data provided by scouts and higher headquarters, battalion and company commanders must conduct a thorough reconnaissance of their defensive sectors and the surrounding terrain. During the reconnaissance, they must complete several tasks.

First, they must prepare a sketch map of the area. Building numbers should be assigned and indicated on the sketch. They should prepare enough of these sketches so that each platoon leader has a copy.

Second, they should prepare a notebook which describes each building. They should evaluate and carefully inspect each building to determine defensive strengths and weaknesses. Many structures that appear strong may have walls which offer little protection. Particular attention should be paid to strongly constructed buildings - those that have walls that provide protection from direct fire and ceilings that will support the weight of the upper stories if they collapse. Buildings with few windows or doors and those built of nonflammable materials should be noted for possible use. Buildings should also be checked for basements and fields of fire. During the reconnaissance, the commanders should be alert for buildings with adequate fields of fire and room areas sufficient for firing of recoilless weapons, Dragons, and TOWs.

25. Terrain.

Urban terrain is three-dimensional: ground level (streets and parks), above ground (buildings), and below ground (subways and sewers). Analysis of all manmade and natural terrain features is critical when planning to defend on urban terrain.

There are four categories of urban areas: villages, strip areas, towns or small cities, and large cities. Your defense plan is affected by the type of urban area he will be operating in.

Villages on the approaches to large towns or cities may be used by you to add depth to the defense or to secure the flanks.

These villages are often characterized by clusters of stone, brick, or concrete houses and buildings. Company-size battle positions can be established in villages to block approaches into main defensive positions.

Care must be exercised in selecting a village to defend. If the terrain allows a village to be bypassed and there are no other villages on defensible terrain within mutually supporting distance, it may not be wise to defend in that village. The defending force could be easily cut off.

Villages are often situated on chokepoints in valleys, dominating the only high-speed avenue of approach through the terrain ([Figure 1-44](#)). If the buildings in such a village are strongly constructed and provide excellent protection against both direct and indirect fires, a formidable defense can be formed by placing a company in the town, while controlling adjacent terrain with other battalion elements.



Figure 1-44. Village.

Strip areas are formed as houses, stores, and factories are built along roads or down valleys between towns and villages. They afford you the same advantages that villages do. If visibility is good and sufficient fields of fire are available, an element acting as a covering force can occupy a few positions within the strip and deceive the enemy into thinking it is an extensive defense line. Strip areas often afford covered avenues of withdrawal to the flanks ([Figure 1-45](#)).

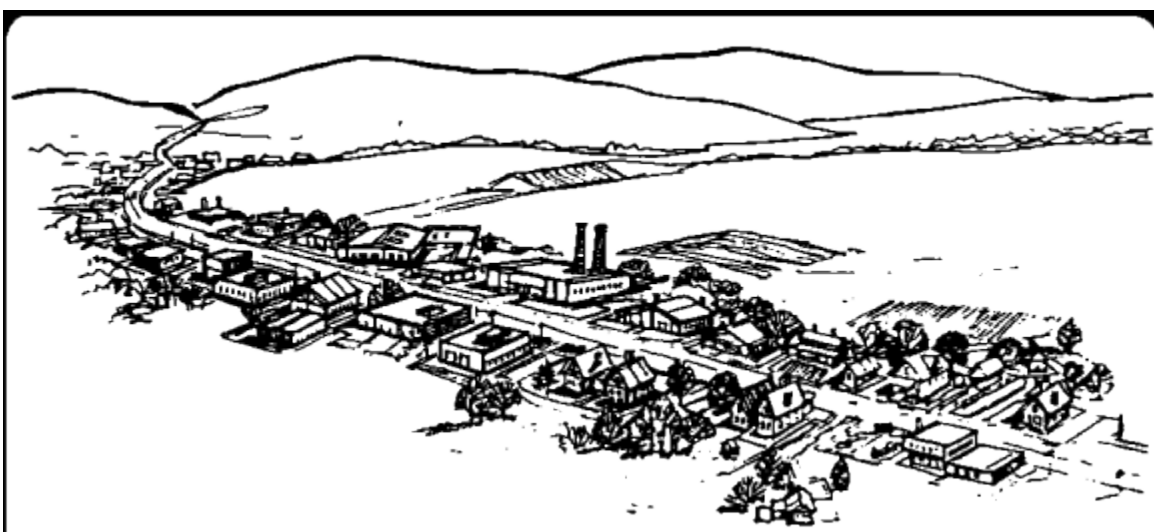


Figure 1-45. Strip Areas.

In small cities and towns, it is often difficult to find positions that provide both good fields of fire and good cover. The forward edges of a town usually offer the best fields of fire, but normally they can be easily targeted by enemy overwatch and supporting fire. These areas often contain residential buildings constructed of light material. Factories, civic buildings, and other heavy structures, which provide adequate cover and are more suitable for a defense, are generally deeper in the town and have limited fields of fire on likely avenues of approach. ([Figure 1-46](#)).

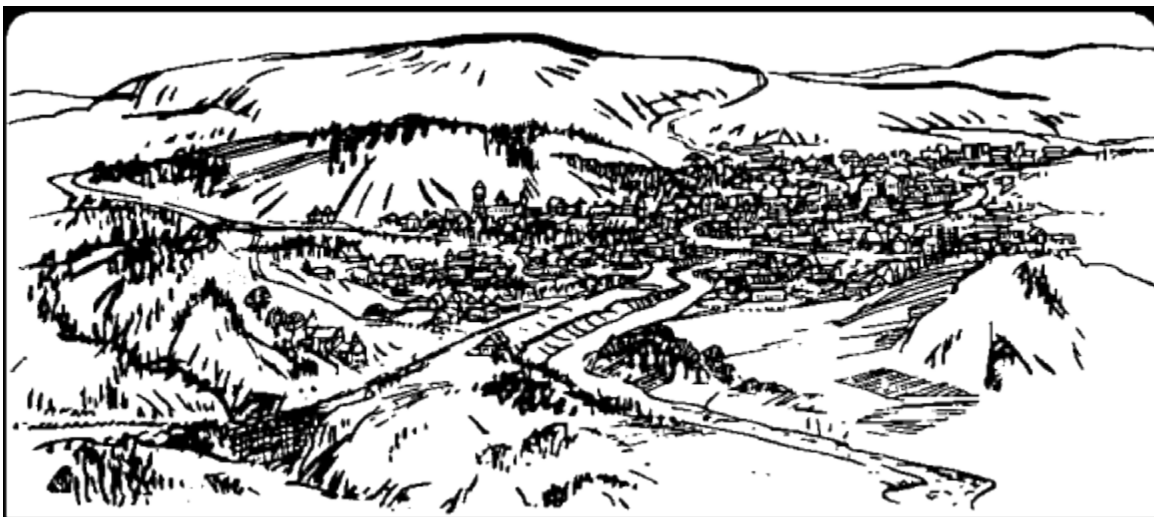


Figure 1-46. Small Cities and Towns.

Because the forward edge of a town is the obvious position for the defender, it should be avoided unless:

- terrain limits the enemy's ability to engage it with accurate fires, and
- it contains strongly constructed buildings which offer adequate protection from enemy fire.

A force may initially be assigned battle positions on the forward edge of the town. Its mission is to provide early warning of the enemy's advance, engage the enemy at long range, and deceive the enemy as to the true location of the defense. This force should withdraw in time to avoid decisive engagement. If there is limited observation from the forward edge, a force should be positioned on more favorable terrain forward or to the flanks of the town to gain better observation and, if possible, engage the enemy at long range.

A small force can gain a significant combat power advantage when defending a small city or town if it places tanks, TOWs, and Dragons on positions dominating critical approaches. To deny the enemy the ability to bypass the town or city, the defending force must control surrounding key terrain and coordinate with adjacent forces. Obstacles and minefields assist in slowing and canalizing the attacker. Reserve forces should be placed where they can quickly reinforce critical areas.

To prevent airmobile or airborne landings within the city or town, the commander must cover probable landing zones and drop zones, such as parks or stadiums, with obstacles or fire.

In large urban areas, you must consider that the terrain is restrictive due to large buildings that are normally close together. This requires a higher density of troops and smaller defensive sectors than in natural open terrain. ([Figure 1-47](#)).

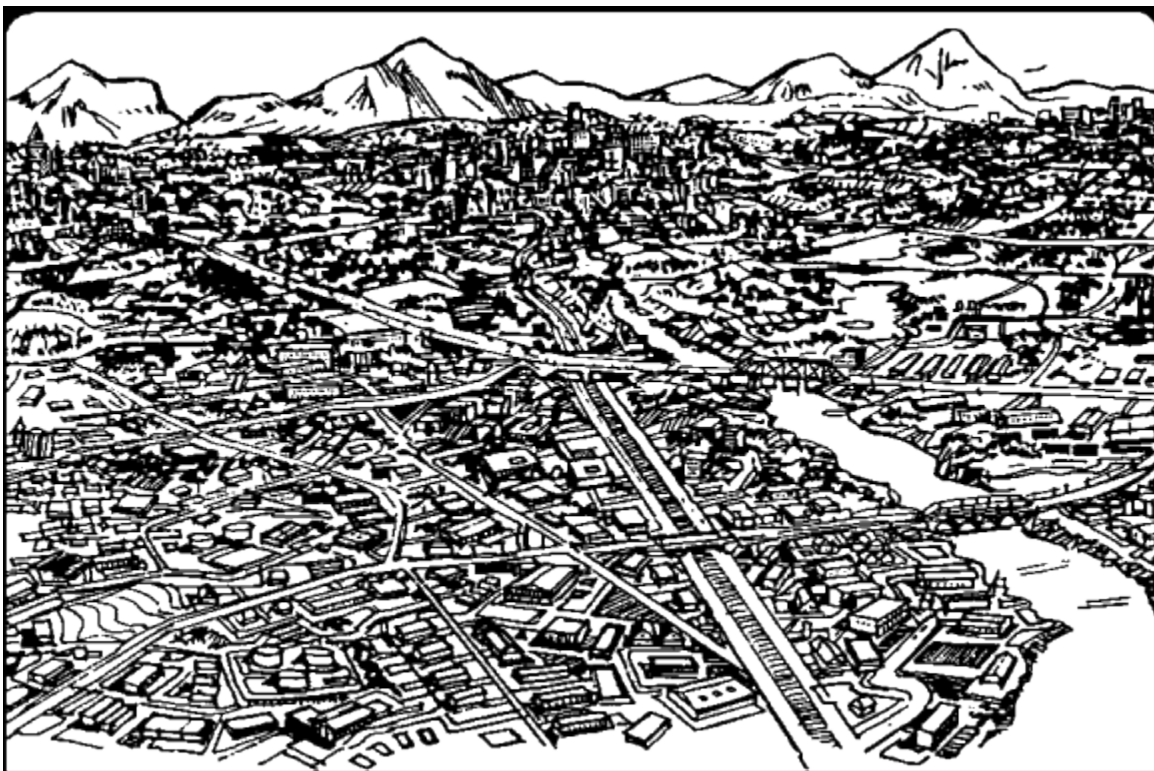


Figure 1-47. Large Urban Areas.

Units will occupy defensive frontage approximately one-third of that occupied in open areas. An infantry company, which might occupy 1,500 to 2,000 meters in open terrain, will likely be restricted to a frontage of 300 to 800 meters in urban terrain, depending on the density of buildings and rubble, and the street patterns.

UNIT	FRONTAGES	DEPTHS
Battalion or Battalion Task Force	4 to 8 blocks	2 to 4 blocks
Company or Company Team	3 to 6 blocks	2 to 3 blocks

NOTE: An average city block has a frontage of about 175 meters.

These minimum figures apply in areas of dense, block-type construction, multistory buildings, and underground passages.

In a large town or city, a battalion is normally given a sector to defend and normally establishes a series of defensive positions. Unlike villages or towns, open terrain adjacent to the built-up area will normally not be present for you to integrate into your plan. Although mutual support between positions should be

maintained, urban terrain often allows for infiltration routes that the enemy may use to pass between positions. Thus, you must identify:

- Positions which enable him to place surprise fires on the enemy.
- Covered and concealed routes for friendly elements to move between positions (for example, subways and sewers).
- Structures which dominate large areas.
- Areas such as parks, boulevards, rivers, highways, and railroads where antitank weapons have fields of fire.
- Firing positions for mortars.
- Command locations that offer cover, concealment, and ease of command and control.
- Protected storage areas for supplies.

Buildings that contribute most to the general plan of defense are selected for occupation. Mutual support between positions is essential. Buildings that are selected should:

- offer good protection;
- have strong floors to keep the structure from collapsing under weight of debris;
- have thick walls;
- be constructed of nonflammable materials (avoid wood);
- be strategically located (for example, corner buildings and prominent structures); and
- be adjacent to streets, alleys, vacant lots, and park sites. (These buildings usually provide better fields of fire and are more easily tied in with other buildings.)

26. Troops Available.

- **Employment of Squads.** Squads are generally employed abreast so that they all can shoot toward the expected direction of attack. In urban terrain, squads may be separated by rooms within buildings or be in different buildings. It is critical that squad positions be mutually supporting and allow for overlapping sectors of fire, even if the buildings and walls separate the positions.
- **Employments of Platoons.** Once you have decided where to defend, you should select platoon battle positions or sectors for the platoons to defend that:
 - block or restrict the enemy's advances, and
 - control key areas.

The frontage for a platoon will be approximately one to two city blocks. In addition to his primary and alternate positions, the platoon leader normally selects one supplementary position to reorient his defense in order to meet enemy threats from a different direction.

- **Employment of Companies.** Battalion commanders employ their companies in battle positions or sectors. Depending on the type of urban area, a company may be employed on the forward edge of the flanks of the area in order to force the enemy to deploy early without decisive engagement. The other companies may then be employed in a series of strongpoints in the center of the city or town. In all cases, mutual support between positions is essential.

The frontage of a company or company team defending in an urban area will normally be three to six city blocks. Companies should also have designated alternate and supplementary positions.

- **Employment of the Reserve.** Your defense plan must consider the employment of the reserve. For urban combat, a reserve force:

- normally consists primarily of infantry.
- must be as mobile as possible,
- may be a platoon at company level or one or two platoons at battalion level, and
- may be supported by tanks.

The reserve force should be prepared to:

- counterattack to regain key positions,
- block enemy penetrations,
- meet unexpected thrusts, and
- assist by fire in the disengagement and withdrawal of endangered positions.

- **Employment of Tanks.** You should employ tanks to take advantage of their long-range fires and mobility. Urban terrain restricts the mobility of tanks and makes them vulnerable to the antiarmor weapons of the enemy infantry.

When tanks are employed in the defense of a city, infantry should be positioned to provide security against close-in fires and to provide security against close-in fires and to detect targets. Antitank weapons should supplement tank fires. Tanks should be assigned primary, alternate, and supplementary positions, as well as primary and alternate sectors.

Tanks should be located on likely enemy avenues of approach to take advantage of their long-range fires. They may be:

- Positioned on the edge of the city in mutually supporting positions.
- Positioned on key terrain on the flanks of towns and villages.
- Used to cover barricades and obstacles by fire.
- Part of the reserve.

Tanks are normally employed by platoon. However, in some urban situations, sections and even individual tanks may be employed with infantry platoons or squads. This is done in order to

provide the tanks with the close-in security of the infantry. When retained under the control of a company or company team commander, a tank platoon provides a mobile force to respond to enemy threats on different avenues of approach.

● **Employment of Fire Support.** Artillery fire support may be used in the direct or indirect fire role. Artillery fire should be used to:

- Suppress and blind enemy overwatch elements.
- Engage enemy infantry.
- Provide counterbattery fire.
- Support counterattacks.
- Provide direct fire when necessary.

Mortars at battalion and company level are employed to maximize the effect of their high-angle fires. They should be used to engage:

- Enemy overwatch positions.
- Enemy infantry before they seize a foothold.
- Targets on rooftops.
- Enemy reinforcements as they come within range.

Fire planning must be comprehensive due to the proximity of buildings to targets, minimum range restrictions, repositioning requirements. Mortar and artillery fires are planned on top of and immediately around defensive positions for close support.

FPFs are planned to stop assaults in front of the defensive positions. Fires within the city are planned along likely routes of advance to destroy the enemy as he attempts to deepen a penetration.

At battalion level, the commander should establish priorities of fire based on avenues of approach and Threat systems that present the greatest danger to the defense. For example:

- During the attacker's initial advance, tanks, BMPs, and overwatching elements are the greatest threat to the defense. ATGMs should concentrate on destroying tanks first, then BMPs. Artillery and mortar fires should suppress and destroy enemy ATGMs.
- If enemy formations secure a foothold, priority is shifted to destruction of enemy forces within the penetration.

As the enemy attack progresses in the city, fires are increased to separate infantry from supporting tanks and fighting vehicles. During this phase, artillery concentrates on attacking infantry, counterfire missions, and the destruction of reinforcements that are approaching the city.

When initiated, counterattacks are given priority of supporting fires. When artillery is firing the missions as mentioned above, it must remain mobile and be prepared to displace to preplanned positions to avoid enemy counterbattery fire.

The battalion heavy mortar platoon may be initially positioned forward in support of the scout platoon. After withdrawal of the scouts, the mortar platoon is positioned where it can support the whole battalion.

At company and platoon level, fire plans include fires of organic, attached, and supporting weapons. You also plan your mortar and artillery fires on top of and immediately around your battle positions for close support.

Based on the location of platoon positions in relation to the most likely enemy avenues of approach, you assign FPFs to platoon leaders. Each rifle platoon leader then assigns each of his machineguns a sector of fire and a final protective line (FPL). These positions should be selected to provide interlocking grazing fire and mutual support between adjacent units. It is essential that proposed FPLs be "walked out" to determine the extent of grazing fire available and to locate dead grazing fire available and to locate deadspace. Deadspace can be covered by:

- Sniper fire.
- Grenade launchers.
- Mines and boobytraps.
- Indirect fires.
- Obstacles.

FPLs are fired on preplanned signals from the platoon leader.

- **Employment of Air Defense Assets.** Assets available to the commander, such as Redeye and Vulcan, are normally employed to ensure all-round air defense. The lack of good firing positions for long-range air defense missile systems in the urban area may limit the number of deployed weapons. In the defense, weapons systems may have to be winched or airlifted into positions. Rooftops and parking garages are good firing positions because they normally offer a better line-of-sight capability.

Redeye and Vulcans can be assigned the mission of protecting specific positions or placed in general support of the battalion.

- **Employment of Engineers.** Engineers are employed under battalion control or attached to companies and platoons as required. Normally, one engineer platoon is attached to a battalion or battalion task force. You must consider engineer tasks that enhance:
 - Survivability.
 - Mobility.
 - Countermobility.

Tasks that engineers can accomplish in the defense of an urban area include:

- Constructing obstacles and rubble.
- Clearing fields of fire.
- Laying mines.
- Preparing routes to the rear.
- Preparing fighting positions.
- Other required tasks.

● **Employment of the Antitank Platoon.** The antitank platoon is normally attached to or in support of the battalion security force, providing long-range antitank fires forward of the main defense. Separate antitank sections may be attached to companies to cover likely armor approaches. Once the security force withdraws, the antitank platoon is normally employed in general support of the battalion.

● **Employment of Scouts.** Depending on the situation and terrain, the battalion scout platoon may provide a security force forward of the urban area to give the commander early warning of enemy activity. Upon withdrawal of the security force, the scout platoon may be given any of the following missions:

- Flank or rear security.
- Occupy a defensive sector (or battle position).
- Reserve.

● **Employment of Ground Surveillance Radar (GSR).** GSR is best employed on the outskirts of urban areas because of the line-of sight problems within the built-up area. During periods of limited visibility, if suitable avenues exist, GSR can be placed to monitor sectors. Because of the normal ranges found in urban areas and the likely narrowness of the sector ranges, GSR can be vulnerable to detection and direct fire. Cross vectoring will be important in this environment.

27. Time Available.

The last aspect of METT-T is time available. At this point, you organize and establish priorities of work. In urban defensive operations, an example priority of work sequence is:

- Establish security.
- Assign sectors of responsibility and position key weapons.
- Clear fields of fire.
- Prepare initial fighting positions.
- Establish communications.
- Emplace obstacles and mines.

- Improve fighting positions.
- Prepare alternate and supplementary positions.
- Establish and mark all routes between positions.

Many tasks can be accomplished concurrently, but priorities for preparation should be according to the commander's order.

- **Establish Security.** Your unit should immediately establish all-round security by placing forces on likely approaches. Security for troop positions should also be established. Each fighting position should routinely have at least one soldier to provide security during all preparations.
- **Assign Sectors of Responsibility.** Boundaries define sectors of responsibility. They include areas within which units may fire and maneuver without interference or coordination with other units. Responsibility for primary avenues of approach should never be split. In areas of semidetached construction, where observation and movement are less restricted, boundaries should normally be established along alleys or streets in such a manner as to include both sides of a street in a single sector. Where buildings present a continuous front along streets, boundaries may have to extend to one side of the street.

As mentioned earlier, battalion and company commanders must analyze the terrain so as to maximize the effects of key weapons systems.

- **Clear Fields of Fire.** In urban terrain, it may be necessary to selectively rubble certain buildings and structures to give you greater protection and fields of fire. If the ceiling of a lower-story room can support the weight of the rubble, collapsing the top floor of a building before the battle starts may give better protection against indirect fires. Rubbling an entire building can increase the fields of fire and create an obstacle to enemy movement. You must be careful, however, because rubbing the building too soon (or rubbing too many) may give away exact locations and destroy the cover from direct fire that the building affords. The rubbled buildings may also interfere with planned routes of withdrawal or counterattack.
- **Select and Prepare Initial Fighting Positions.** You should select positions in depth. The unit should begin preparation of the positions as soon as troops arrive and continue preparation as long as the positions are occupied. Enemy infiltration or movement will sometimes occur between and behind friendly positions. Therefore, each position must be organized for allround defense. You should also:
 - Make minimum alternation to the outside appearance of buildings where positions are located.
 - Screen or block windows and other openings to keep the enemy from seeing in and tossing in hand grenades. This must be done so that the enemy cannot tell which openings the defenders are behind.
 - Remove combustible material to limit the danger of fire. Fires are obviously dangerous to defenders and they create smoke which may conceal attacking troops. For these reasons, you should remove all flammable materials and stockpile firefighting

equipment (water, sand, etc.). The danger of fire also influences the type of ammunition used in the defense. Tracers or incendiary rounds, for example, should not be used extensively if there is a high threat of fire.

- Turn off electricity and gas. Both propane and natural gas are explosive. Natural gas is poisonous as well and is not filtered by the protective mask. Propane gas, although not poisonous, is heavier than air, and if it leaks into an enclosed area, it will displace the oxygen and cause suffocation. Gas mains and electricity should be shut off at the facility that serves the city.
- Locate positions so as not to establish a pattern. The unit should avoid obvious firing locations, like church steeples.
- Camouflage positions.
- Reinforce positions with materials available-beds, furniture, etc.
- Block stairwells and doors with wire or other material to prevent enemy movement. Blow holes between floors and rooms to allow covered movement within a building.
- Prepare range cards and fire plans.
- Emplace machineguns in basements. When basements are not used, they should be sealed off to prevent enemy entry.

- **Establish Communications.** You should consider the effects of urban terrain on communications when allocating time for this priority. The time spent establishing an effective communications system for the defense may be considerably longer than in more conventional terrain. The following are characteristics that affect the means of communications:

- Line-of-sight limitations under both visual and radio means of communication.
- Wire laid at street level is easily damaged by rubble and vehicular traffic.
- The noise of urban combat will be considerably higher than in other areas, making sound signals difficult to hear.

You should consider the following techniques when planning for communications:

- Lay wire through buildings where possible to afford maximum protection.
- Use existing telephone systems when possible (many telephone cables are underground).
- Emplace radios and retransmission sites on the second or third floors of buildings.
- Use messengers at all levels. This is the most secure means.

- **Emplace Obstacles and Mines.** To save time and resources in the preparation of the defense, you must emphasize using all available materials found in urban areas to create obstacles. Such materials may include automobiles, railcars, and rubble.

Engineers must be prepared to provide timely advice and resources regarding the employment of obstacles and mines. The principles for employing mines and obstacles do not change in the urban defense; however, techniques change. For example, burying and concealing mines in streets will be difficult because of concrete and asphalt. Scatterable mines may be effective on the outskirts of a city or in parks; however, in a city core, areas may be too restrictive.

- **Improve Fighting Positions.** When time permits, all positions, to include supplementary and alternate positions, should be reinforced with sandbags and provided overhead cover. Again, timely and accurate support from attached engineers will help in this effort.
- **Establish and Mark All Routes Between Positions.** Reconnaissance by all defending elements should help select routes for use by defenders moving between positions. Movement is often critical in urban fighting, and early selection and marking of routes will add to the defender's advantages.

28. Command and Control.

As in all other defensive situations, you should position yourself well forward so that you can control the action. In the urban environment, this is even more critical because of the numerous obstacles, poor visibility, difficult in communicating, and intensity of the fighting.

- **Command.** Tactical operations centers (TOCs) should be located underground. The vulnerability of TOCs will require all around security. Since each TOC may have to secure itself, it should be near the reserve unit, when possible, for added security. When collocated with another unit, the TOC may not have to provide its own security.

Rubble will often hinder movement of tracked and wheeled vehicles. As a result, battalion and company headquarters must be prepared to backpack communications and other equipment needed to operate. A simplified TOC organization will be required for ease of movement.

- **Control Measures.** Graphic control measures common to other tactical environments are also used in urban combat. Streets are ideal for phaselines. These and other control measures ensure coordination throughout the chain of command.

29. Organization of the Defense.

The defense is organized into three areas--the covering force area, the main battle area, and the rear area ([Figure 1-48](#)).

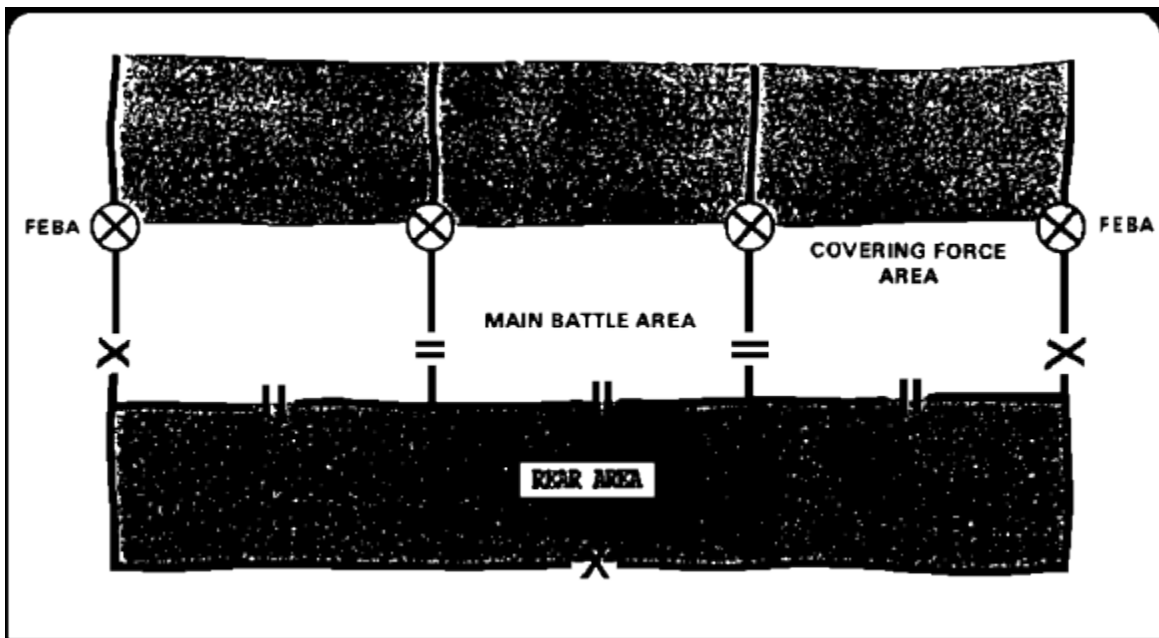


Figure 1-48. Organization of the Battlefield.

A battalion defending in urban areas may have missions in any one of these areas, depending on the mission of the brigade or division.

- **Covering Force Area.** The defensive battle begins with a combined arms covering force deployed well forward. The covering force uses all available forces to destroy enemy forces and slow down their momentum. Artillery, tactical air, and attack helicopters are employed to fight the covering force battle.

Covering forces contribute to the defense by:

- Alerting the urban defense to the strength, location, and general direction of the enemy's main and supporting attacks.
- Delaying enemy first-echelon detachments.
- Initiating early engagement of enemy forces.
- Deceiving the enemy as to the true location of the main defense force.
- Destroying enemy forces.

The withdrawal of the covering force must not result in easing of pressure on the enemy. The urban environment may complicate the handoff of the battle from the covering force to the main battle area force; but, it is important that this transition be accomplished smoothly to prevent the enemy from gaining momentum.

- **Main Battle Area.** The decisive battle is fought in the main battle area (MBA) ([Figure 1-49](#)).

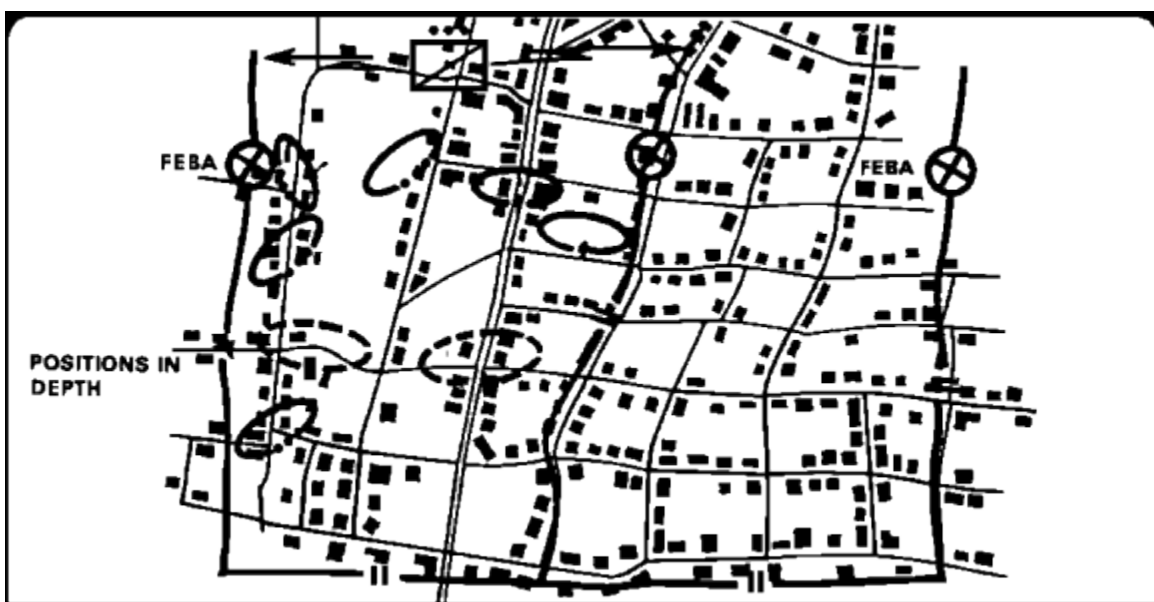


Figure 1-49. Main Battle Area.

Depending on the threat, the battalion commander may deploy companies on the forward edges of the city or in battle positions in depth. In either case, the defense is made stronger by tying in forces.

The battalion commander normally employs a security force to the front to provide early warning and assist in the handoff of the covering force battle.

The size and location of battle positions within the battalion's sector depend largely on the type of enemy encountered and the ability to move between positions to block threatened areas. It may be desirable to place small antiarmor elements, secured by infantry, on the forward edges while the main defense is deployed in depth.

A force assigned battle positions on the forward edge of a city or town should:

- Provide early warning of the enemy's advance.
- Engage the enemy at long range.
- Deceive the enemy as to the true location of the defense.

Whether the battalion defends a town or a large city, as enemy forces enter and maneuver to seize initial objectives, the defender should subject the enemy to all available fires to destroy and suppress the direct fire weapons that support the ground attack. Tanks and BMPs should be engaged as soon as they come within the effective range of friendly antiarmor weapons.

As the enemy attack develops, the actions of small unit leaders will assume increased importance. Squad and platoon leaders will often be responsible for fighting independent battles. Thus, it is extremely important that each subordinate thoroughly understand his commander's concept of the defense.

- **Rear Area.** The rear area is behind the MBA. It is the area from which supply and maintenance support is sent forward. The rear area must be protected. The facilities in it are not organized as combat elements, and they are critical to the overall defense.
- **Counterattack.** Small, infantry-heavy reserves, supported by tanks (if present), should be prepared to counterattack to regain key positions, to block enemy penetrations, to meet unexpected enemy thrusts, and to assist by fire the disengagement and withdrawal of endangered positions.

When counterattacking, the reserve may be attached to the unit in whose sector the counterattack is taking place. This makes coordination easier, especially if the counterattack goes through that unit's positions.

- **Defense During Limited Visibility.** Threat forces routinely conduct night attacks to maintain daylight momentum. Companies should employ the following measures to defend against night attacks:
 - Defensive positions and crew served weapons should be shifted just before dark to deceive the enemy as to their exact location. (A squad or fire team can often be shifted to an adjacent building and cover the same avenue of approach.)
 - Unoccupied areas between units, which can be covered by observed fire during daylight, may have to be occupied or patrolled at night.
 - Radar, remote sensors, and night observation devices should be emplaced on streets and open areas.
 - Nuisance mines, noise-making devices, tanglefoot tactical wire, and OPs should be positioned on secondary avenues of approach for early warning.
 - OPs preplanned indirect fires, patrols, and anti-intrusion devices should be utilized to prevent infiltration.
 - Artificial illumination should be planned.
 - Leaders must maintain strict fire discipline to prevent disclosures of friendly positions.
 - To avoid disclosure of defensive positions, indirect fire weapons, grenade launchers, and hand grenades should be used when defenses are probed.

When the enemy begins his night assault, FPFs should be initiated by a prearranged signal. Crew-serviced weapons, tank-mounted weapons, and individual riflemen fire within their assigned sectors. Grenades and command-detonated mines should be used to supplement other fires as the enemy approaches the positions.

At the beginning of morning nautical twilight (BMNT), defenders should move to daylight positions. During attacks in fog, rain, or snowstorms, many of the techniques described for night defense apply. You must rely heavily on OPs and patrolling in these situations.

30. Summary.

This concludes the discussions on planning a defense of urbanized terrain. We covered the characteristics of buildings, fundamentals of the defense, how the enemy attacks, preparation of the defense plan, and several other areas you must understand in order to conduct a defense on urban terrain. We will now cover the preparation of an operations estimate.

PART C - PREPARE AN OPERATION ESTIMATE

1. General.

The purpose of the estimate of the situation is to collect and analyze relevant information for developing, within the time limits and available information, the most effective solution to a problem. The estimate is applicable to any situation and to any level or type of command. Although normally used in solving tactical problems, it is applicable to other military activities. Anyone may use this process. While the staff officer uses the format of the appropriate staff estimate to provide conclusions and recommendations to the commander, he uses the commander's estimate format to select a course of action for accomplishing a specific task in his field of interest.

The estimate is as thorough as time and circumstances permit. The detail varies with the level and type of command. Estimates may be written, but are usually a mental process. This is true at division and lower levels. The format provides a logical sequence for analyzing all relevant factors. Information, conclusions, and recommendations from other pertinent estimates may be used. Estimates are revised continuously as factors affecting the operation change, as new facts are recognized, as assumptions are replaced by facts or rendered invalid, or as changes to the mission are received or indicated.

This part of the subcourse provides detailed information on the content of commander and staff estimates. The formats contained in this part describe a logical method of determining the most suitable course of action to accomplish a tactical mission. The estimate should be as thorough and detailed as time will permit. When time is not pressing, a detailed written estimate may be made. When time is pressing, the format serves as a mental checklist to ensure that all elements of the situation are considered in arriving at a recommendation or decision.

In the process of developing an estimate in the military decision-making process, commanders and staff at all levels must constantly be aware of the human dimension of battle. The human dimension of battle is defined as the overall mental, moral, and physical willingness and capability of soldiers (leaders and troops) to do their duty on the battlefield--as individuals, and be part of a cohesive, disciplined unit. The will and abilities of soldiers are critical to victory. Commanders must seek continuously to enhance the will to fight. To accomplish this, you strive to enhance the morale and moral force of their soldiers while degrading the morale and moral force of enemy soldiers. Key aspects of the human dimension that leaders can influence are morale, confidence, courage, and motivation. Staff officers also must consider the human dimension of battle as they develop their estimate of the situation. Each staff officer will serve the commander by capitalizing upon the human dimension of battle thereby providing recommendations which have carefully evaluated personnel and units of the command and their ability to accomplish the assigned mission.

2. Commander's (Operation Officer's) Estimate of the Situation.

The following example of the commander's estimate of the situation outlines the basic format and content, provides a detailed description of each paragraph, and explains preparation techniques. The estimate is based on the commander's personal knowledge of the situation, ethical considerations, and on staff estimates. The commander uses this estimate to reach a decision to accomplish a specific mission.

Commanders of combat support and combat service support units conduct estimates in support of operations to determine the supportability of tactical courses of action and the best course of action for executing their specific mission. The estimate is often prepared in the commander's role as a special staff officer.

FORMAT

References: Include any maps, chart, or other documents relevant to this estimate.

1. .

This paragraph is the commander's restated mission which is the result of the mission analysis accomplished on the mission assigned by higher headquarters. This is the statement of task(s) to be accomplished and the purpose to be achieved. This includes specified tasks, implied tasks, mission essential tasks, limitations and constraints, commander's intent (2 levels up) and preliminary time analysis.

2. .

In this paragraph, the commander considers all elements and aspects of the situation that influence operations and formulated feasible courses of action. This paragraph provides the foundation for the analysis that follows.

a. Considerations Affecting the Possible Courses of Action. The commander determines those facts of the situation that will influence friendly and enemy actions and, therefore, may influence the choice of a course of action. The commander analyzes each fact and deduces the probable effect on other facts and on enemy and friendly actions. In the absence of facts, he uses logical assumptions.

(1) Characteristics of the area of operations. Includes analysis of the effects of pertinent characteristics of the operations. The commander considers the following:

(a) Weather. Analysis of predicted weather and light data for the period, together with an evaluation of the affects on friendly and enemy operations (for example, mobility) and on employment by friendly and enemy forces of means or devices affected by weather conditions including optical and electronic line of sight devices and chemical, biological, and nuclear devices.

(b) Terrain. Effect of terrain on observation and fire; cover and concealment; movement (surface and air); employment of friendly and enemy nuclear and chemical weapons and enemy biological weapons; radiating devices,

such as communications, electronic warfare, and combat surveillance; unconventional warfare; psychological operations; and other aspects of military operations, as appropriate. Effect of military aspects of terrain on enemy operations and our operations. Determination of key terrain features and avenues of approach.

(c) Other pertinent factors. Analysis of political, economic, sociological, psychological, and other factors such as hydrography, environment, communications, science, technology, materials, transportation, and manpower, are included together with deductions about their effects on friendly and enemy operations.

(2) Enemy situation. The commander considers:

(a) Dispositions. Locations of enemy forces, including fire support elements.

(b) Composition. Indication of identity, armament, and type of organization of enemy forces.

(c) Strength. Stated in the following terms:

-- Committed forces. Number and size of enemy units committed against our forces.

-- Reinforcements. Number and size of enemy reinforcements.

-- Artillery. Number and size of supporting field artillery.

-- Air and nuclear, biological, and chemical capabilities. Enemy air strength available to support ground operation; and, if known, the yield and number of nuclear warheads and quantities of chemical and biological agents and delivery means.

-- Other considerations. Enemy forces, not listed above, known to have special capabilities, such as electronic warfare, air defense, anti-tank, unconventional warfare, or combat surveillance by electronic, sonic, or other means, together with deductions concerning their effect on our combat power.

(d) Recent and present significant activities. Summaries of recent and present activities of the enemy that may indicate his future actions are included. If it is reasonable to believe that the enemy has knowledge of our situation or intentions, the commander emphasizes this fact. He pays particular attention to the pattern of employment of enemy nuclear and chemical weapons. He considers such items as enemy employment of new or unconventional weapons, and tactics or innovations in existing tactics, techniques, or materiel. He may include an evaluation of enemy intelligence collection means or techniques.

(e) Peculiarities and weaknesses. The commander indicates enemy peculiarities and weaknesses that will favorably or unfavorably influence the combat effectiveness of his forces.

(3) Own situation. The same considerations as those included in (2) above are listed for own forces. However, biological agents and delivery means are not included in the listing of considerations. The subparagraph states recent and present significant activities, peculiarities, and weaknesses and includes such items as morale, training, civil affairs, and logistics. The operations officer may compile this information for the estimate, based on knowledge of the situation and on information obtained from the personnel, logistics, and civil military operations (CMO) officers. Otherwise, the commander obtains this information directly from the personnel, operations logistics, and CMO officers' staff estimate. The information is usually in abbreviated form because it may be a repetition of what is generally known. However, own dispositions are significant and must be described in sufficient detail to determine considerations that will influence the commander's choice of a course of action favorably or unfavorably, to include vulnerability to enemy nuclear, biological, or chemical attack. The information in this subparagraph of the estimate includes an indication of own vulnerability to such attack.

(4) Relative combat power. Based on an analysis of data concerning the enemy and his own situation, the commander determines and states his conclusions concerning relative combat power. These conclusions consist of an estimate of the general overall relationship of the combat power of his forces to that of the enemy forces, including significant strengths and vulnerabilities. The basic factors of combat power are maneuver units and supporting fires.

Additional factors that might be considered are deception, mobility, terrain, dispositions, weather, logistic support, psychological operations, and electronic warfare. These factors do not always apply to any particular situation. For every operation, a determination of the appropriate factors must be made. The commander's analysis of relative combat power provides a general background for formulating feasible courses of action and may indicate the basic nature and the characteristics of those courses of action. The conclusions assist in speeding up the estimating process by providing an indication of courses of action that would not be feasible and, therefore, should not be considered. The commander avoids becoming involved in an attempt to make a detailed study of personnel or weapons on both sides. He bases conclusions on a general impression of the relative capability of the two forces.

b. Enemy Capabilities. Enemy capabilities are courses of action that the enemy can physically perform and that will influence the accomplishment of our mission, if adopted. The intelligence officer normally identifies enemy capabilities and presents them in the intelligence estimate. If justified, the intelligence officer also provides his evaluation of the relative probability of adoption of these capabilities. The intelligence officer also must strive to inform the commander about what he believes the enemy intends to do. The commander considers all enemy capabilities presented by the intelligence officer. He may accept, revise, or discard them,

or develop additional capabilities, if appropriate. the commander includes enemy vulnerabilities that are exploitable at his own, higher, or lower levels of command.

c. Own Courses of Action. Joint Chiefs of Staff Publication 1 defines a course of action as "any sequence of acts which an individual or a unit may follow; a possible plan open to an individual or a commander which would accomplish or is related to the accomplishment of his mission; the scheme adopted to accomplish a job or mission; a line of conduct in an engagement." The commander may suggest that one or more courses of action be addressed when he provides guidance to the staff on the preparation of their estimates. The operations officer formulates additional courses of action that appear to be feasible. The commander considers the courses of action that the operations officer presented in his operation estimate. The commander may reject, modify, or formulate additional ones, if appropriate. This procedure assists the commander in considering all significantly different courses of action. The ability to formulate feasible courses of action quickly and accurately is essential to sound decision making. The formulation and recognition of feasible courses of action depend, in part, on the perceived influence of the aspects of the situation considered in paragraph 2a and 2b of the estimate.

When formulating courses of action, you should use the following criteria as a guide:

Is the course of action feasible? Does the command have the capability to perform the contemplated action? Will the course of action accomplish the mission without undue damage to the command?

Are the courses of action in sufficient detail to be distinguishable, one from the other, for purpose of analysis?

Courses of action may be stated in either broad or detailed terms. During your analysis of courses of action (para 3b), you may add details, make revisions, and fully develop the courses of action.

You must include the following elements in each course of action:

The type of action (attack, defend) (what).

The time that the action will begin or be completed (when).

The location of the action (in the defense, the assigned sector, in the attack, the general direction of the attack) (where).

The use of available means (how) (a broad indication of the maneuver elements, the form of maneuver, or the formation to be employed, and, if appropriate, nuclear and chemical fires to be employed; when necessary to distinguish between courses of action, you may include other supporting fires).

The purpose of the action (why).

As indicated above, courses of action can be stated in broad or detailed terms. The amount of detail included is subject to the judgment of the commander; however, courses of action should

include sufficient detail to distinguish one from the other for purposes of subsequent analysis and comparison. In most instances, the distinguishing differences are in the elements of where and how. In expressing courses of action, either the where is used, stating only a portion of the how (normally used when courses of action are expressed in general terms); or the how is used, stating the where in general terms (normally used when courses of action are expressed in more detailed terms). A course of action for an offensive mission will include the what (attack), the when (time of attack), the where (direction of attack), the how (use of available means), and the why (purpose of the action). As indicated above, the amount of detail included in these elements is a matter of judgment. A course of action for a defensive mission will include the what (defend), the when (time the defense is to be effective), the where (may use location of forward edge of the battle area (FEBA) or areas units will defend), the how (allocation of forces to main battle area, covering force area, and reserve), and the why (purpose of action). Again, the amount of detail included in these elements is a matter of judgment.

3. .

The commander must analyze each of the courses of action formulated in paragraph 2c of the estimate to determine its advantages and disadvantages, to incorporate improvements, to determine requirements for supporting fires, and to define requirements for any other actions in conjunction with the course of action (for example, nuclear weapons, interdiction of deep targets). The commander accomplishes this by war gaming the course(s) of action.

The first part of the analysis (war gaming) is a preliminary analysis to identify those enemy capabilities (courses of action) listed in paragraph 2b of the estimate that will materially assist in choosing the best course of action and those that will not. Those enemy capabilities that are not selected for use in analysis are still valid capabilities that, if adopted by the enemy, will influence the accomplishment of the mission. However, they are of no assistance in determining the relative probability of success of own courses of action. Although these enemy capabilities are not selected, they continue to be used for reference purposes. Those enemy capabilities selected for use in analysis require judgment because there are no absolute rules governing this process. In general, when in doubt concerning the selection of a particular capability, the commander selects it. In exercising judgment, the commander:

Analyzes the enemy capabilities presented by the intelligence officer, paying particular attention to those capabilities having a high probability of adoption. He will probably not select a capability with a low probability of adoption.

Examines enemy maneuver capabilities to determine those capabilities that, if adopted, would produce a different effect on friendly courses of action. He selects these capabilities for analysis because they will assist in choosing a course of action. Reexamines the selected enemy maneuver capabilities to determine the characteristics that are inherent in other capabilities. For example, the characteristics of the delay capability may be inherent in the defense capability.

For speed and simplicity, may combine more than one maneuver capability for analysis, (for example, he may combine defense and reinforcement of the defense, or he may combine attack and reinforcement of the attack).

The enemy artillery, air, and nuclear, biological, and chemical capabilities are support capabilities. The enemy ordinarily adopt these capabilities only in connection with maneuver capabilities, particularly at division and below. Therefore, the commander would not select these enemy capabilities separately for analysis, but he would combine them with maneuver capabilities. Thus, as a final step in selecting the enemy capabilities that will assist in choosing the best course of action, the commander combines the support capabilities with the maneuver capabilities previously selected. Assuming the commander has selected the defense capability; the attack capability; and the reinforcement capability plus support capabilities, to include fire support and nuclear and chemical capabilities, he could state them as follows:

Attack (now tomorrow), reinforced with/by (type of units), supported by available fire support, to include nuclear and chemical weapons.

Defend (now, tomorrow), reinforced with/by (type of units), supported by available fire support, to include nuclear and chemical weapons.

The second part of the analysis (war gaming) is the analysis of each of his own possible courses of action (para 2c). The commander separately analyzes each friendly course of action against each of the selected enemy capabilities to determine its outcome. He visualizes the action by both sides in logical sequence from start to finish. He considers all facts of the estimate developed in paragraph 2 and their effects on the action. He determines the enemy capability to oppose the course of action and considers the degree of success in the face of enemy opposition. He weighs the degree of risk and its acceptability for each course of action. He considers active and passive measures to decrease the effects of enemy nuclear, biological or chemical, guerrilla, and air attacks. The commander makes no attempt to compare courses of action at this time. Paragraph 3 is a series of independent analyses of courses of action versus enemy capabilities. It is neither possible nor practical for the commander to reach a conclusion on the best course of action until all the information developed during analysis is available and the comparison in paragraph 4 has been completed. Paragraph 3 is that part of the estimate in which the commander attempts to visualize and to anticipate all possible eventualities to discover strengths and weaknesses of each course of action. The following is an outline of one method that the commander uses to analyze an offensive course of action:

The commander begins by determining the combat power that the enemy has committed in the initial position that must be ruptured. He then determines the combat power required to rupture the position in the face of available enemy power.

At division, the commander visualizes combat power in terms of numbers and types of maneuver battalions. He examines current dispositions to determine those units that can be most logically employed. In making this examination, he considers facts that bear on the employment of specific units and redistribution of units necessary to initiate the course of action. At this time, he may consider the requirement for control headquarters.

The commander then visualizes the movement of units from initial positions or from positions to which units have been moved.

The commander visualizes the movement of units across the line of departure and the affect of enemy reaction to reinforce or to counter the attack. At this time, he considers and visualizes the unit requirement for supporting attacks. He also considers the requirement for supporting fires, use of smoke, and supporting air to rupture the initial enemy position. He visualizes critical areas and incidents and notes advantages and disadvantages. When the rupture of the initial enemy position is completed, the commander develops the composition of the main attack and required supporting attack. If the initial attack fails, he makes his decision on the composition, location, and possible employment of the reserve.

The commander follows a similar process in continuing to war game to the objective. He considers requirement for supporting fires; nuclear and chemical fires; and use of smoke, flame, and supporting air. He assesses the capability of the supporting attack to contribute to success by immobilizing enemy units or by preventing the use of reinforcements. He again visualizes critical areas and incidents and notes advantages and disadvantages. He considers employment of the reserve and makes a decision on its movement into more advantageous positions. He repeats this process until the objective is secured.

Once the objective is secured, the commander considers requirements to consolidate, reorganize, build up, and move the reserve to the most advantageous positions. If the objective cannot be secured or the purpose (why) of the course of action cannot be achieved, the course of action is discarded.

The commander repeats this process of analysis for each course of action against each of the selected enemy courses of action.

On completion of war gaming each course of action against each selected enemy capability, the commander should find that the following have been developed.

Requirements for readjustments of initial dispositions, force allocation (defense), or composition of the main and supporting attack forces (offense).

Requirements for combat support and combat service support and incorporation of deception and electronic warfare techniques.

Probable enemy reaction during each phase of the operation.

Probable critical areas and incidents and how success is to be achieved in each ease.

Attrition of friendly and enemy forces during each phase of the operation.

Location of the commitment of following elements of the attacking force (when defending).

Location of the composition of the reserve and its possible employment during various phases of the action.

Actions required in the objective area (offense).

Advantages and disadvantages of each course of action.

4. .

In this paragraph, the commander compares courses of action analyzed in paragraph 3 and reaches a conclusion on the best course of action. He uses his judgment, skill, and experience in making this comparison. Some advantages and disadvantages may be so insignificant that he may ignore them. As a result of his analysis, he determines the significance of each advantage and disadvantage in accomplishing the mission.

The commander lists the advantages and disadvantages that emerged during analysis of each course of action. He may organize this subparagraph using one of two methods. One method is to list each course of action with all advantages and disadvantages. A second method of comparison is to isolate certain significant factors (such as terrain, time, nuclear vulnerability, and own dispositions) and to discuss all courses of action under each significant factor. When he uses this second method, the commander first determines decisive factors in the situation confronting him because there is no list of significant factors applicable to all situations. A simple decision table may be constructed to portray the comparison of courses of action. This technique is particularly useful with an unwritten estimate because it permits the commander's thoughts to be conveniently summarized. The commander states a conclusion on the course of action that offers the best prospect of success. Examples of decision tables are shown below in paragraph 5.

5. .

The commander uses the course of action that offered the best probability of success as a basis for the decision. The decision provides for accomplishment of all elements of the commander's restated mission. The commander's decision, the last step of the estimate, is a clear concise statement of the general scheme of maneuver and supporting fires for the operation. The commander and staff will use it to develop the remainder of the tactical plan. The elements of what, when, where, how, and why are present in the course of action. However, before the decision is understandable it must also include the element of who (the command itself or the appropriate elements of the command). The commander includes elaboration of this decision when he outlines his concept to the staff.

Annexes (as required)

SAMPLE DECISION TABLES

As mentioned in paragraph 4 of the format for the commander's (operation officers) estimate of the situation, simple decision tables may be used to assist in making a determination of the best course of action by providing a graphic representation of choices. On the next page is an example of such a decision table:

This concludes lesson one. You should know how to prepare a company team defense plan, plan a defense of urbanized terrain, and prepare an operations estimate plan. After reviewing all the material in this lesson, you should complete the practice exercise for lesson one. Answers and feedback for the question in the practice exercise will be provided to show you where further study is required.

COURSE OF ACTION	ADVANTAGES	DISADVANTAGES
COURSE OF ACTION 1	Main attack avoids major terrain obstacles. Adequate maneuver room for main attack and reserve.	Main attack faces stronger resistance at beginning.
COURSE OF ACTION 2	Main attack gains good observation early. Supporting attack provides flank protection to main attack.	Initially, reserve may have to be employed in zone of supporting attack.
DISCUSSION		

Course of Action	SIGNIFICANT FACTORS			
	Dispositions	Weather/Terrain	Supporting Attack	Obstacles
COURSE OF ACTION 1	Avoids main enemy strength.	Not the best avenue of approach to division objective.	Relies heavily on success of supporting attack.	Encounters a limited number of artificial obstacles.
COURSE OF ACTION 2	Hits main enemy strength.	Best of the avenues of approach to division objective being considered. Secures dominant terrain.	Not as dependent success of supporting attack.	Encounters a large number of artificial obstacles.
Favors	Course of action 1 over course of action 2.	Course of action 2 over course of action 1.	Course of action 2 over course of action 1.	Course of action 1 over course of action 2.

PRACTICE EXERCISE

LESSON 1

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

Situation: You are the commander of an infantry company. The company is preparing for defensive operations, and you are preparing a company defense plan.

1. In preparing a company defense plan, you must apply the fundamentals of defense. To exploit the advantages of the defender, you would
 - ☐ A. employ your long range weapons in the CFA.
 - B. conduct a mobile defense.
 - C. have the company prepare positions, construct obstacles, and conceal its efforts in advance.
 - D. initiate and be prepared to defend from one general direction.
2. During the preparation of your defense plan, you must apply the fundamental of understanding the enemy. When Threat forces attack they
 - A. attack with each battalion deployed in three echelons.
 - B. attack to destroy their opponent rather than seize terrain.
 - C. use first echelon battalions to drive deep into the rear to disrupt the opponents defense.
 - D. dismount 100 to 400 meters short of the defenders position.

Situation: You are the commander of an infantry company/company team, and are planning the defense of an urban area.

3. Use Figure 1. In the figure the MRR is
 - A. isolating an objective.
 - B. conducting a surprise attack.
 - C. executing a deliberate attack.
 - D. bypassing strongpoints.

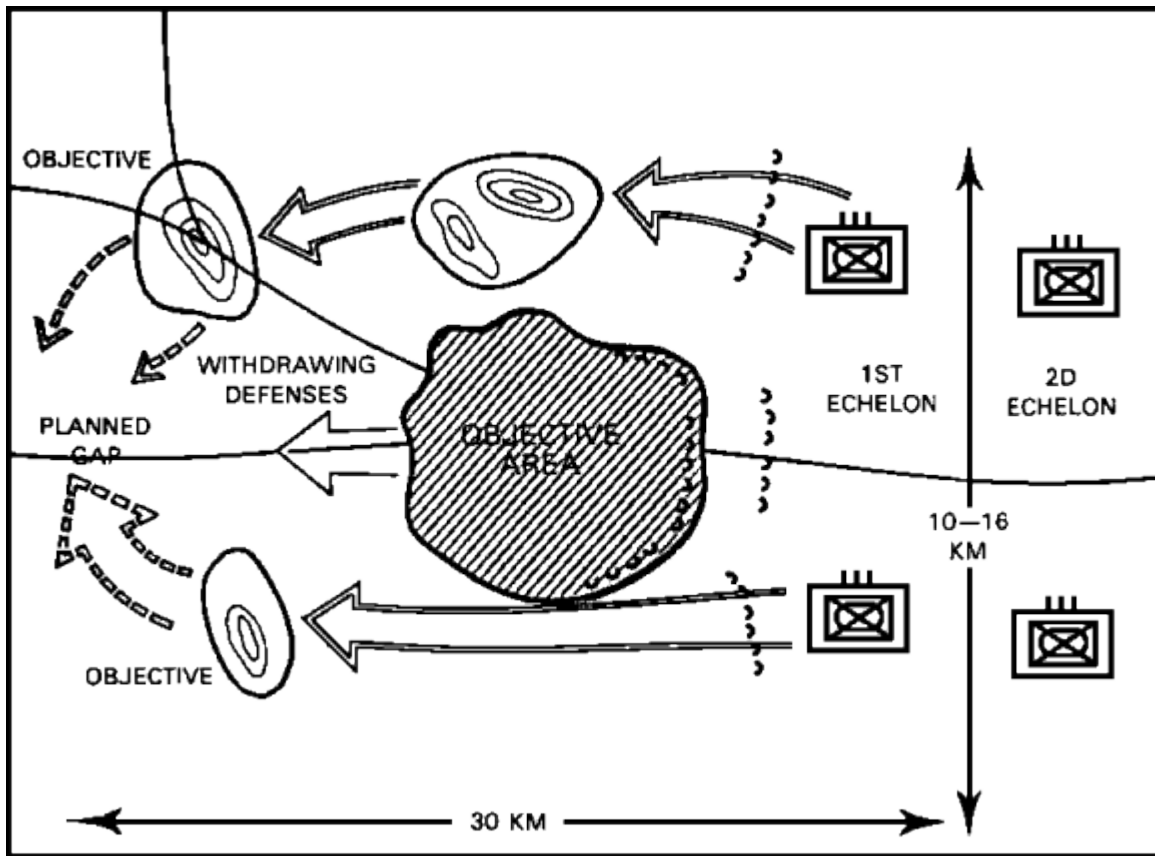


Figure 1. How the Enemy Attacks.

4. In planning the defense in large urban areas, you must carefully consider the restrictive terrain due to large building being close together. In this situation units will occupy defensive frontage
 - A. 4 to 8 blocks wide.
 - B. approximately one-half of those in open areas.
 - C. 2 to 5 blocks wide.
 - D. approximately one-third of those in open-areas.

Situation: You are the commander of an infantry company. The company is preparing for defensive operations, and you are preparing an operation estimate.

5. In preparing a commander's estimate your conclusions on relative combat power are based on
 - A. general impressions of the relative capability of the two forces.
 - B. detailed study of the personnel and weapons of both sides.
 - C. enemy capabilities that the enemy can physically perform.
 - D. number of enemy maneuver units, weather and terrain.

6. You are preparing to begin the second part of the analysis of courses of action (paragraph 3) of the commanders estimate. In this part, you
 - A. analyze each of your own courses of action.
 - B. identify enemy capabilities.
 - C. examine enemy maneuver capabilities.
 - D. re-examine enemy capabilities presented by the S2.
-

Lesson 2

COORDINATE AND CONDUCT THE INFANTRY COMPANY DEFENSE

OVERVIEW

Lesson Description: In this lesson you will learn to coordinate and conduct the infantry company defense.

Terminal Learning Objective:

Action: Identify and be familiar with the capabilities of combat engineer elements, plan and coordinate for passage of lines, develop a company patrolling plan, and conduct the defense.

Condition: Given the subcourse material contained in this lesson.

Standard: The student will demonstrate his comprehension and knowledge by identifying and being familiar with the capabilities of combat engineer elements, plan and coordinate for passage of lines, develop a company patrolling plan and conduct the defense.

References: The material in this lesson was derived from the following publications:

[FM 71-1.](#)

[FM 5-100.](#)

[FM 7-10.](#)

PART A - FAMILIARIZE WITH THE CAPABILITIES OF COMBAT ENGINEER ELEMENTS

1. General.

Defenders have significant advantages over the attacker. They know the terrain better, they reinforce it with mines and obstacles, and they can operate from protected positions. The attacker must maneuver through such terrain on which he is vulnerable. As time goes on, defenders normally become stronger, the attacker weakens.

Only through offensive action can a force compel an enemy to do its will. The single advantage of the attacker is the initiative. The attacker chooses the time and place for battle and concentrates combat power there.

Since the offense is the decisive form of combat, US Army doctrine calls for assuming the offensive as soon as possible. This doctrine has important implications for defending US forces. The defenders must take the initiative from the attacking enemy. Offensive counterattacks, executed quickly, are integral to the defense.

Combat engineers are vital to successful defenses. Engineer support at all levels may make the difference between success and failure. Engineer personnel, equipment, organizations, and materials stop the enemy advance, provide protection against enemy fires, and enable counterattacking forces to maneuver. These three engineer mission areas-counter mobility, survivability, and mobility-are always

important in combined arms operations. They are particularly vital in defenses where the enemy has the initiative and perhaps superior combat power.

In addition, engineers provide general engineering support to sustain forward combat. They also provide topographic engineering assistance and fight as infantry.

2. Mobility Support.

Mobility operations in the defense preserve the freedom to maneuver and sustain the forces logistically. Maneuver commanders must be able to engage the enemy and move to other battle positions. Reserve forces and fire support units must have adequate routes in and out of battle positions. Main supply routes (MSRs) must remain open to sustain the defense and support the counterattack. Engineers preserve mobility by:

- Maintaining and constructing combat routes.
- Bypassing or breaching mines and obstacles.
- Supporting friendly counterattacks.

Maintaining and Construction Combat Routes. Engineers must be involved early in defensive planning. The engineers estimate must identify and include all covered and concealed routes that can facilitate the movement of friendly forces. If possible, commanders and their supporting engineers should conduct an on-the-ground reconnaissance.

The emphasis will be on upgrading or maintaining roads rather than constructing new ones. Major road construction projects can reduce the combat support available for other functions. The engineer effort required elsewhere on the battlefield will determine how much can be allocated to routes. When possible, new combat roads and trails must be constructed so that they require the least work.

Combat engineers will normally be equipped with combat engineer vehicles, armor vehicle launched bridge (AVLBs), dozers, and armored combat earthmovers to open combat roads and trails. Enemy activity may preclude elaborate and detailed construction. Engineers should preposition repair materials and bridging as far forward as the tactical situation allows. Engineers should do only combat-essential work for the passage of maneuver forces and logistical support units.

Breaching Minefields and Obstacles. Enemy artillery, sabotage, or air strikes on bridges, roads, and urban areas may create obstacles. He will deliver interdiction mines using a variety of systems. All units should be able to breach them. If doing so exceeds unit capabilities, engineers must perform the breach. As boundaries and situations change, engineers will have to open closed routes.

Supporting Friendly Counterattack. Although not usually placed in reserve, engineer forces should be committed to the reserve force task organization as necessary to prepare for and conduct counterattacks. To support counterattacks, engineers must be employed well forward in troop formations. They must be organized and equipped to bypass or breach minefields and obstacles rapidly and to cross gaps while under fire.

Once started, friendly counterattacks must maintain momentum and violence. To that end, the engineers must be prepared to execute the required mobility tasks.

3. Counter mobility Support.

Counter mobility operations reduce the enemy's ability to mass and to maneuver and increase his vulnerability to friendly fire. To support the defense, engineers reinforce terrain by constructing obstacles and installing minefields. Engineers work closely with maneuver commanders and staffs, insuring the maximum effectiveness of mines and obstacles. In addition to the terrain and tactical situation, engineers plan carefully for logistic support, time, and manpower.

Counter mobility operations make the best use of existing terrain. Terrain, when supplemented and integrated with obstacles, mines, fires, and maneuver becomes a combat multiplier for the defenders.

Obstacles. Existing and reinforcing obstacles are used by maneuver commanders to reinforce terrain. Existing obstacles are natural and man-made features such as swamps and marches, waterways, lakes and tidal estuaries, forests, mountains, ditches, urban areas, cuts and fills, escarpments, and snow. Defenses rely on them. Improving them rather than constructing new ones can save time, labor, and materials. Engineers make these obstacles more efficient, turning them into combat multipliers. Engineers must identify and integrate them into the obstacle plan. Reinforcing obstacles are constructed to reinforce and tie together existing obstacles. They are grouped by design-constructed, demolition, and expedient. The various types are listed below.

● **Types.**

Constructed. Construction obstacles-anti-vehicular and antipersonnel-include a wide variety from log cribs to concrete tumble blocks and steel H-beams.

Antivehicle obstacles include antitank ditches, log obstacles, and concrete and steel obstacles. Constructing antitank ditches requires earthmovers and demolitions. Properly dug, these ditches are very effective against all vehicles. When tied to the existing terrain, ditches force the enemy to use gap-crossing assets. Several ditches in depth can deter this ability early in the battle. Steel and concrete obstacles-tetrahedrons, hedgehogs, falling blocks, and log obstacles-also serve well as antitank obstacles. For concealment and surprise, tank obstacles are sited to take advantage of trees, brush, or ground folds. Flooding and mining these obstacles improve their effectiveness. They must be integrated with the terrain to make bypassing difficult.

Antipersonnel obstacles are usually wire entanglements. They are designed primarily to impede foot troops. They effectively separate foot soldiers from fighting vehicles, and they protect friendly forces from dismounted infantry. They have some effect on tracked and wheeled vehicles when construction and sited well. Wire obstacles strengthen strongpoints, battle positions, and antivehicle obstacles. They are most effective when:

- Visible to friendly observation and protected by fire, antipersonnel mines, trip flares, and warning devices.
- Concealed from enemy observation.
- Erected in irregular traces of bands or zones.
- Coordinated with other elements of the defense.

Demolition. These obstacles are created with conventional or nuclear explosives. They may be completely or partially destroyed structures, or earth and rock. Road craters, blown bridges, and rubble are examples. Antitank ditches may also be created by explosives. Demolition obstacles are categorized as reserve or preliminary. Reserve demolition obstacles are those most critical to the mission and are designated by a senior commander. They are prepared and blown only on order of the authorizing commander.

Reserve demolitions are critical to the tactical plan and are usually located on avenues of approach, counterattack routes, or routes of withdrawal. Combat orders designate such demolitions for execution according to special instructions known as demolition orders.

A written demolition order must be prepared for each reserve demolition target. It will specify the authority for blowing the target and designate a demolition guard and a demolition firing party. The importance of the target and the enemy situation will determine the size of the demolition guard. The demolition guard protects the target prior to execution. The firing party detonates the demolition. The demolition guard or part of it may be the firing party. A target folder providing technical demolition information must be prepared.

Communication between the authorizing commander and the demolition guard is critical. Code words for firing the demolition or directing a change in its status are normally passed by radio.

Preliminary demolition obstacles are prepared and blown either immediately or shortly after preparation in concert with the tactical plan. The majority of demolition obstacles will be preliminary targets. Demolitions will be placed; and the target will be blown immediately or shortly after preparation. The targets will not normally require guards or formal written instruction for execution. To prevent impeding the movement and maneuver of friendly forces, their preparation and execution can and should be phased with the tactical plan. Engineers may detonate the prepared target or turn it over to maneuver forces to detonate at their discretion. Preparing targets and turning them over to local tactical units for execution, as required by the battle, is extremely critical. Close coordination, thorough training, and firm command and control are required.

Expedient. Imagination and ingenuity can create expedient obstacles from existing resource on the battlefield. Rubbling of building, large rocks bulldozed onto roads, and flooding are examples. The major advantage is lessening of the logistical burden.

● **Employment.**

Selection and Placement. By selecting and placing obstacles suitably, the defender increase the effectiveness of his obstacle plan and lessens the total emplacement effort. Obstacles must reinforce other obstacles and be integrated with the existing terrain. They must be placed to make bypassing difficult, to divert the enemy, or to increase the effectiveness of defensive fires.

Obstacles employed in depth are essential to stop the attacker's breaching capabilities. Building obstacles, one behind the other, requires the enemy to deploy and regroup continually. The enemy loses strength and momentum when under friendly fires. The assault effort is slowed and divided. The priority of obstacle use is in the sector of the expected main attack.

Obstacles should increase the effect of weapons. Thus, obstacle plans should be developed concurrently with the scheme of maneuver and the fire support plan to increase the effects of direct and indirect fire. The resulting obstacles stop, slow, or divert enemy attackers in selected areas so that maximum combat power can be massed on enemy concentrations.

Concealment. Camouflage and concealment can ensure surprise. Lacking prior knowledge of the existence of an obstacle, the enemy must reduce it without planning. The defender can use the confusion of the enemy caught without the required men, material, or equipment for breaching.

Properly located obstacles can be inconspicuous. Obstacles can be located in ground folds, around blind curves in roads, or beyond the crests of hills. Yet, large obstacle systems cannot be concealed by siting along. To camouflage obstacles from aerial observation, regular geometric patterns are avoided.

Gaps and Lanes. Gaps and lanes are areas intentionally left unmined or without obstacles. Plans must provide concealed lanes and gaps in the battlefield obstacle systems. Lanes allow covering forces, patrols, counterattacking forces, and friendly troops on other missions to move through the system without difficulty. Plans must ensure that all lanes and gaps can be closed quickly when enemy action is expected. Lanes and gaps must be covered by fire so that the enemy cannot rush through them before they can be closed.

Fire Support Integration. Obstacles increase the effectiveness of fire. Obstacles slow or halt the enemy, thereby increasing his vulnerability to fire. Considering terrain and the effective ranges of available fire support weapons, the tactical commander, engineer, and fire support coordinator site weapons and obstacles to the best advantage. The engineer provides the fire support coordinator with the obstacle plan upon its completion. Observing and adjusting fire are essential to gaining the full advantage of obstacle use.

- **Mines.** Mines warfare is changing rapidly. In the past, mines were emplaced by hand and activated primarily by pressure. Employing minefields required labor, time, and extensive materials. Commander's options are limited. Once emplaced, minefields remained until activated or removed. They had to be installed early, in anticipation of enemy movement. When emplaced, they became obstacles to both enemy and friendly mobility.

Types. Mines and delivery systems are improving and can generally be divided into two categories - conventional and scatterable. Now mines which will self-destruct after a preselected time can be delivered rapidly and remotely by a variety of systems. They can be emplaced on, or directly in front of, an attacking enemy, and counterattacks can be conducted through the same area after the mines have self-destructed.

The variety of mines and delivery systems available requires comprehensive doctrine for their employment. [Figure 2-1](#). lists mines by their method of delivery, self-destruct feature, and emplacement characteristics. It also identifies those mines which may or may not be placed in classical patterns. The table provides a basis by which mines can be categorized as scatterable

or conventional according to their self-destruct feature. [Figure 2-2](#) lists mines by category. It also provides characteristics of each mine.

				Designed to Self Destruct	Emplacement Remote(R) Direct (D)	Pattern/ Non-Pattern (P) or (N)
MINES	GROUND	HAND	(AT) M15/M19/M21/M24 - (AP)M14/M16/M18	NO	D	P/N
			WASPMS	YES	D	N
		MECHANICAL	surface Planted (subsurface) M15 AT only	NO	D	N
			Thrown (surface) GEMSS/FLIPPER	YES	R	N
		EXPLOSIVE	MOPMS	YES	R	N
			VOLCANO	YES	R	N
	ARTILLERY	RAMM/ADAM		YES	R	N
	AIR	High Performance A/C GATOR/ERAM		YES	R	N
		HELICOPTER	MECHANICAL - M56	YES	R	N
			EXPLOSIVE - VOLCANO	YES	R	N

Figure 2-1. Mine Delivery Methods.

	Mines	Arming	Fuzing	Warhead	Sensing Width	Anti-Handling Device	Self De-struct	Explosive Weight	Mine Weight
CONVENTIONAL MINES					ANTITANK				
	M15	Manual	Pressure	Blast	Track	Fuze Well	No	22 lbs	30 lbs
	M19	Manual	Pressure	Blast	Track	Fuze Well	No	21 lbs	28 lbs
	M21	Manual	Tilt Rod	Shape Charge	Full Vehicle	Fuze Well	No	11 lbs	17 lbs
	M24	Manual	Tape Strip	3.5 in Rocket	10m	None	No	—	18 lbs
					ANTIPERSONNEL				
	M14	Manual	Pressure	Blast	Point	None	No	1 oz	3.3 oz
SCATTERABLE MINES	M16	Manual	Pressure/Tripwire	Bounding	Point	Fuze Well	No	1 lb	8 lbs
	M18A1 (Claymore)	Manual	Command	Directional Fragmentation	N/A	None	No	1.5 lbs	3.5 lbs
					ANTITANK				
	M56	Helicopter Drop	Pressure	Blast	Track	Yes	Yes	3.2 lbs	5.9 lbs
	RAAM (M70/73)	1. G-Force 2. Spin	Magnetic	M-S Plate	Vehicle	Yes	Yes	1.3 lbs	3.8 lbs
	GEMSS AT (M75)	1. Spin 2. Elec Impulse	Magnetic	M-S Plate	Vehicle	Yes	Yes	1.3 lbs	3.8 lbs
	GATOR AT (BLU-91/B)	1. Bore Rider Pin 2. Elec Impulse	Magnetic	M-S Plate	Vehicle	Yes	Yes	1.3 lbs	3.8 lbs
	MOPMS AT (XM 78)	1. Bore Rider Pin 2. Elec Impulse	Magnetic	M-S Plate	Vehicle	Yes	Yes	1.3 lbs	3.8 lbs
	WASPMS (XM 84)	Manual	Acoustic/IR	Self-Forging Fragment	50m	Yes	Yes	12 lbs	35 lbs
	VOLCANO	1. Bore Rider Pin 2. Elec Impulse	Magnetic	M-S Plate	Vehicle	Yes	Yes	1.3 lbs	3.8 lbs
	ERAM		Acoustic/IR	Self-Forging Fragment	30m	Yes	Yes	—	—
					ANTIPERSONNEL				
	ADAM (M67/M72)	1. G-Force 2. Spin	Tripwire	Bounding/Frag	6m	Yes	Yes	—	0.9 lb
	GEMSS AP (M74)	1. Spin 2. Elec Impulse	Tripwire	Blast/Frag	12m	Yes	Yes	1.2 lbs	3.2 lbs
	MOPMS AP (XM77)	1. Bore Rider Pin 2. Elec Impulse	Tripwire	Blast/Frag	12m	Yes	Yes	1.2 lbs	3.1 lbs
	GATOR AP (BLU-92/B)	1. Bore Rider Pin 2. Elec Impulse	Tripwire	Blast/Frag	6m	Yes	Yes	1.2 lbs	3.2 lbs
	VOLCANO	1. Bore Rider Pin 2. Elec Impulse	Tripwire	Blast/Frag	6m	Yes	Yes	1.2 lbs	3.2 lbs

Figure 2-2. Mine Categories.

Conventional. Conventional mines are those that do not self-destruct. They are designed to be directly emplaced by hand or by mechanical mine planting equipment. They can be buried or surface-laid. Conventional mines can be emplaced in classical patterns or randomly if the tactical situation dictates.

Scatterable. Scatterable mines self-destruct after a set period of time. With the exception of WASPMS which is directly emplaced, scatterable mines are remotely delivered by ground systems, artillery, helicopters, and high performance aircraft.

Caution: You should beware of the terms scatterable and FASCAM (the family of scatterable mines) when referring to specific systems and their employment. Those generic terms are applicable in only the most general sense when discussing doctrine. Whenever possible refer to the specific system and means of emplacement, and the characteristics will be clear.

Employment. Mines destroy, delay, disrupt, and channel enemy forces. They are very effective in controlling terrain inflicting casualties. Mine warfare systems are flexible. Any portion of the battlefield can be mined. Compared with the costs of other weapons systems, mines are efficient. However, if they are to be used successfully and promptly, they must be available. The transportation assets to haul them must also be available.

In mine warfare, the advantage is always with the side that emplaces the mines. Minefields detection and breaching are very inexact sciences. Detection involves many variables--the types of mines, the quality and sensitivity of detection equipment, the terrain and weather, the soil and rock conditions, and foreign objects.

Minefields breaching is restricted by three basic factors. First, minefields are normally covered by direct or indirect fires. Second, the rapid breaching methods that must be used under fire either detonate the mines with explosives or use heavy equipment to detonate or cast them aside. Both are only partially effective. Finally, soldiers fear mines that kill without warning. Thus, when operating in areas known or suspected to be mined, even well-trained and disciplined troops slow the tempo of operations. They then become more vulnerable to other weapons systems.

In a war of maneuver, mines will be used throughout the battlefield to control terrain and to secure obvious avenues of approach. They will also be delivered into rear areas to disrupt enemy formations and lines of communications.

For the foreseeable future, the most effective means of achieving countermobility is to reinforce the terrain with mines. Mines can also be employed with obstacles. Upon encountering mines, an attacker has three options. He may halt his advance, he may divert his attack around the mines, or he may deploy his breaching systems to cross the area. Each course provides an advantage to a skillful defender.

Threat forces recognize that casualties from minefields breaching may be fewer if they "bull through." Many threat tanks are equipped with either mine plows or rollers. Therefore, mined areas should include antitank obstacles and should be covered by direct and observed indirect fire.

Threat forces will also use line charges in order to breach minefields rapidly. Techniques should be employed to defeat rapid breach by the enemy. Minefields should have a depth that exceeds line charges. Antitank weapons overwatching the minefields should kill the first tanks in each

breached lane. Then the minefield should be rapidly reclosed by remotely delivered scatterable mines to seal the breaches.

Remotely deliver scatterable mines are a valuable element of combat power that threat forces take seriously. With the introduction of new hardware, North Atlantic Treaty Organization (NATO's) capability for rapidly creating obstacles, using explosives and mines, is now tremendously increased. Most dangerous of all, according to Soviet tacticians, is NATO's ability to deliver mines remotely, right into the depths of the attacking forces.

Scatterable mines are placed on the ground in random patterns within a planned area. The precise location of each mine is unknown to the enemy and may impede the movement on friendly forces. The timing and extent of their emplacement, particularly in proximity to friendly forces, are two of the more difficult and critical decisions required of the maneuver commander.

Minefields can be as dangerous to friendly forces as to the enemy. Therefore, these mines must be employed with great care. The safety of friendly troops depends on four points:

- All scatterable mines in the inventory of the US Army self-destruct after set periods of time.
- Mines delivered by high performance aircraft and artillery are normally employed only in enemy controlled territory.
- All mined areas must be carefully and rapidly reported and recorded, and this information must be disseminated for the protection of friendly units.
- Minefields in friendly areas are marked.

Emplacement. Mines may be directly emplaced by hand or planter or remotely delivered by ground equipment, high performance aircraft, fire support systems, and helicopters.

Conventional mines are placed on the surface or buried in random or standard patterns. This emplacement method is time and labor intensive. Its advantage is that mines and minefields can be precisely located. Conventional mines are employed whenever time and resources permit.

Note: For units operating in NATO, international standardization agreement requires that if a minefields is placed in a pattern, that pattern must conform to the requirement of standardization agreement (STANAG) 2036.

Ground mine equipment can plant mines on or below the surface in rows or deliver scatterable mines within well-defined areas. Both are more rapid than hand emplacement.

High-performance aircraft and fire support mine delivery systems can place scatterable mines on the ground in the target area. These systems normally deliver mines into enemy controlled territory. Each system has a probable delivery error, which varies as it is employed.

Scatterable mines may be used for hasty protective and tactical minefields or to close gaps and lanes in front of advancing enemy forces. They should be reserved for those circumstances in which rapid response is essential and enemy plans or dispositions are clearly established.

- **Minefields Types.** Minefields are classified as protective, tactical, point, interdiction, or phony.

Protective. Protective minefields may be either hasty or deliberate. Hasty ones provide close-in security for units occupying a temporary position. These minefields use either hand- or machine-emplaced convention or ground delivered scatterable mines. Engineer support is usually not required. Deliberate ones provide security for relatively permanent installations such as supply depots or missile sites or international frontiers. They normally use conventional mines, hand emplaced by engineers.

Tactical. Tactical minefields disrupt enemy formations, reduce enemy mobility, and increase the effectiveness of friendly weapons. These minefields may be used to protect flanks and to divert or to channel an enemy advance in accordance with the tactical plan. Ground and helicopter systems delivering scatterable mines are ideally suited for this role. Conventional mines can be effectively employed when time and resources permit.

Point. Point minefields hinder enemy use of key areas and disorganize his forces. Mines may be directly emplaced or remotely delivered. These mined areas can be used to increase the effectiveness of obstacles or to block an enemy counterattack along a flank avenue of approach.

Interdiction. Interdiction minefields are placed on the enemy or in enemy rear areas to kill and to disorganize and disrupt lines of communication and command and control activities. These mines may also be emplaced beyond the forward line of troops in areas likely to be occupied by the enemy. They are normally delivered by high-performance aircraft or fire support systems.

Phony. Phony minefields simulate fields in order to deceive the enemy or when the lack of time, personnel, or materiel prevents the employment of actual mines. They become more valuable as the enemy becomes mine conscious.

Employment. Mine operations must complement plans for defense, avoid impeding friendly mobility, and facilitate future operations. Engineers advise commanders to ensure that these objectives are met. To achieve success in mine warfare, commanders and engineers must carefully control mine employment. Commanders and staffs throughout the force must know and follow authorizations and requirements for emplacing mines and reporting, marking, recording, and coordinating minefields. Commanders and engineers must carefully control mine employment.

Detailed and integrated staff coordination is necessary to develop plans for mine warfare operations. A recommended obstacle plan supports the scheme of maneuver and plan for fire support. Minefields are incorporated into the obstacle plan as necessary.

Preplanned conventional and scatterable minefields support the obstacle plan that engineers develop for commanders. Operations officers, fire support coordinators, aviation officers, and air liaison officers assist the engineers. Preplanning locates minefields based on possible enemy actions. Preplanning also facilitates rapid emplacement, especially for mines delivered by artillery, helicopter, and high-performance aircraft.

In all cases, execution is a command decision of each responsible maneuver commander. Each must select the delivery system that best fits the tactical situation and presents the least risk to friendly troops. Employment will be coordinated with higher, lower, and adjacent units prior to execution. Minefields will be reported and recorded afterwards.

In addition to their preplanned use, scatterable mines will be employed against targets of opportunity. Authorizing commanders can control their employment by withholding or delegating authority in accordance with [Figure 2-3](#).

CONVENTIONAL MINES	
Protective Minefields	
Deliberate	Division or installation commander.
Hasty	Brigade commander. May delegate authority to battalion or company level on a mission basis.
Tactical Minefields	Division commander. May delegate authority to brigade level.
Point Minefields	Brigade commander. May delegate authority to battalion level.
Interdiction Minefields	Corps commander. May delegate authority to division level.
Phony Minefields	Authority is the same as type minefield simulated.
SCATTERABLE MINES	
Minefields Containing Scatterable Mines	Corps commander is the employment authority for all minefields containing scatterable mines within the corps area of operations.
Long Duration (24 hours or more)	Corps commander. May delegate employment authority to division level. Division may further delegate to brigade level.
Short Duration (Less than 24 hours)	Same as long duration except authority may be further delegated to battalion or task force level.

Figure 2-3. Minefields Employment Authority.

Authority. The authority to emplace varies with the minefields purpose and the type of mines. The more that mine operations restrict maneuver, the higher the authority in the chain of command. In all cases, the responsible commander must ensure that the proposed field is coordinated with adjacent, lower, higher, and subordinate units. He must further ensure that it will not impede friendly maneuver and that all requirements for reporting, marking, and recording are met.

Minefields Reports. A minefields report is an oral, electronic, or written communication concerning mining activities-friendly or enemy. These reports document friendly and enemy minefields. The information is transmitted through operational channels and furnished to intelligence staff officers. Then it is processed, integrated with terrain intelligence, and disseminated through intelligence channels to affected units.

Theater commanders are responsible for maintaining records of all mined areas. This information is necessary for protecting friendly maneuver and for clearing operations. Engineers at all levels will develop and provide staff supervision for reporting and recording within their areas.

For conventional minefields, there are three mandatory reports:

- A report of intention, made as soon as it is decided to lay a minefields.
- A report of initiation, made by the laying unit when it begins installation.
- A report of completion, submitted when the minefields installation has been completed.

The emplacing unit commander subunit these reports through operational channels to the G3/S3 of the authorizing headquarters. The G3/S3 then disseminates the information by tactical intelligence. When the local situation dictates, a progress report and a report of transfer may be required. The report of transfer is a written report from one commander to another, noting the change in responsibility for a minefields. It is sent to the higher command echelon with authority over both relieved and relieving commanders. Local procedures will be followed for report format. The commander of the emplacing unit will submit the reports to higher headquarters as required by local procedures.

Commanders may require reports on the progress of the emplacements. There are four types of progress reports:

- The proposed minefields report. Initially, most minefields will be in this category.
- The minefields under construction report. Reports of minefields under construction should include the percent completed.
- The minefields ready report, submitted when the minefields is emplaced.
- The minefields executed report. A minefields is not executed until all lanes through the minefields are closed.

Accurate, timely, and uniform reporting is essential for scatterable minefields. Information about emplacement must be disseminated. Because tactical situations are fluid and fastmoving, information about mine employment must be reported and passed quickly and simply to all units that could be affected. The variety of emplacing systems and units requires a standard, central reporting system. There are three standard reports:

- The intention to lay report.
- The scatterable minefields report and record.
- The report of change.

Using the most expeditious secure means, the emplacing unit submits the scatterable minefields report and record through operations channels to the commander who authorized the minefields. It contains the following information:

- Approving authority
- Target (TGT) obstacle
- Type emplacing system
- Type mines
- Self-destruct period
- Aim point/corner points of minefields
- Size safety zone from aim point
- Unit emplacing mines/report number
- Person completing report
- Date-time group (DTG) of report
- Remarks.

This information will be plotted on operations maps and furnished to intelligence officers who integrate it and disseminate the minefields locations with other intelligence.

For preplanned mine missions, including the planned minefields on coordinated obstacle overlays serves as the intention-to-lay report. Engineers prepare these overlays. For targets of opportunity, the delegation of authority to emplace is understood as an intention-to-lay report. For example, the brigade commander may delegate the authority to employ scatterable mines in the sector to a battalion commander. It is understood that the battalion commander who intends to employ mines, need not submit an intention-to-lay report. If a scatterable minefields is changed or reseeded with additional mines, a report of change is submitted.

Minefields Marking. Point and interdiction minefields will not be marked. Other conventional minefields will be marked with standard marking fence and signs. The unit emplacing the minefields will normally be responsible for marking. Scatterable mines employed in enemy controlled territory are not marked. Those delivered in friendly controlled territory are marked as necessary to protect friendly troops. Gaps and lanes will be marked to facilitate passage by friendly troops and vehicles.

Minefields Records. Conventional minefields must be recorded on DA Form 1355 (Minefields Record) or the DA Form 1355-1R (Hasty Protective Minefields Record). These records establish minefields locations. Friendly forces must be able to maneuver safely through or around the minefields or to remove them safely and expeditiously.

Commanders of emplacing units are responsible for detailed and accurate recording. Minefields records are transmitted to the authorizing headquarters (HQ) through operational channels. Engineers maintain permanent theater minefields records for the commanders ([Figure 2-4](#)).

TYPE OF MINEFIELD	MARKING REQUIRED	REPORTS REQUIRED	RECORDS REQUIRED
PROTECTIVE Hasty	Marked or guarded to protect friendly troops and noncombatants.	Intention to Lay Initiation of Laying Completion of Laying Report of Change or Removal	Hasty Protective Minefield record forms—Forwarded to parent unit commander DA Form 1355-1R
Deliberate	As above	As above—Reports forwarded to authorizing headquarters by emplacing commanders.	As above—DA Form to authorizing headquarters
TACTICAL	As required to protect friendly troops—the standard marking fence w/markers is used.	As above—Reports forwarded to authorizing headquarters by emplacing commanders.	DA Form 1355 forwarded to authorizing headquarters.
POINT	None	As above	As above
INTERDICTION	None	As above	A plan is prepared and submitted for approval. Unit submits DA form 1355 after execution.
PHONY	Same as for above simulated minefield.	Same as for above simulated minefield.	Same as for above simulated minefield.

Figure 2-4. Reporting, Marking, and Recording for Conventional Minefields.

The information required for reporting scatterable minefields will be prepared in hard copy by the emplacing unit and forwarded through operations to the authorizing headquarters. The hard copy report becomes the minefields record. If the report is sent as hard copy at the outset then no further record is necessary. At all levels, the record must be specifically identified as such as receive special attention and handling. The engineer officer of the authorizing headquarters forwards the record to the senior engineer headquarters in the theater for the permanent file.

[Figure 2-5.](#) summarizes reporting, marking, and recording for scatterable mines.

MARKING REQUIRED	REPORTS REQUIRED	RECORDS REQUIRED
Delivery in enemy territory not marked. Delivery in friendly territory as required to protect friendly troops.	All pertinent information reported by the most expeditious, secure means. Use scatterable minefield report and record.	Hard copy of minefield report to authorizing commander.

Figure 2-5. Reporting, Marking and Recording for Scatterable Minefields

Whether they are detected, encountered, or discovered by intelligence, enemy minefields or mining activities must be reported by the fastest reliable means. Reports are made to the next higher commander and normally go through operations channels. See [Figure 2-6.](#) for the proper format.

LINE	INFORMATION	LINE	INFORMATION
ALPHA	Map sheet designation	HOTEL	Estimated material and equipment needed to breach minefield
BRAVO	Date and time of collection of information	INDIA	Routes for bypassing minefield (if any)
CHARLIE	Type of minefield (AT, AP) (Self Destructing)	JULIETT	Coordinates of lane entry (if any)
DELTA	Coordinates of minefield extremities	KILO	Coordinates of lane exit (if any)
ECHO	Depth of minefield	LIMA	Width of lanes, in meters (if any)
FOX TROT	Enemy weapons or surveillance	ZULU	Other
GOLF	Estimated time to breach minefield		

Figure 2-6. Report of Enemy Minefields.

The unit detecting the minefields must put up temporary warning signs. When time permits, the minefields must be marked with standard devices. The minefields must be recorded using DA Form 1355. The record should include a sketch and all information, including lanes and markings. The record will be forwarded through operations channels and disseminated with intelligence. A permanent record of the minefields will be kept on file by the theater engineer.

4. Survivability Support.

Engineer survivability operations allow friendly forces to fight even when subjected to a high volume of direct and indirect fire. Engineers construct protective positions for command and control and for critical equipment and supplies. They dig individual and crew-served weapon positions, excavate hull-defilade fighting vehicle positions, and provide cover for personnel and vehicles. The greatest survivability effort is expended in the defense.

In general, the engineer troops and equipment used in survivability work are the same ones used in other engineer operations. For example, to increase survivability, assets may have to be shifted from countermobility. Therefore, maneuver commanders must estimate the situations, carefully allocate forces, and establish clear priorities for engineer effort.

Engineers will assist them in doing so by submitting estimates, preparing staff analyses, and making recommendations. Defenders usually do not know when attacks will come. Thus, they should use all available time to improve defensive positions, whether that time is a few hours or several days.

Normally, key obstacles and minefields have first priority. Then the engineer effort may concentrate on survivability. With time, engineers continue to strengthen defensive positions by constructing strongpoints, fighting and protective positions, and using camouflage and deception.

Fighting and Protective Positions. Engineer resources and time will seldom be sufficient to do all that is required in modern, lethal highly mobile combat. Soldiers and crews must prepare their own positions to the fullest extent possible. Available engineers should work on the high priority protection needs.

First and often most important, sites must be selected. To select fighting positions, commanders must consider both maximum weapons effects and cover. Frequently, tradeoffs must be made. However, engineers can provide excellent cover and effective positions for weapons. Sites for protective positions are generally easier to select.

Individual soldiers will provide themselves with quick, basic, protective positions. Armored vehicles will find defilade positions. Some initial effort may be given to providing adequate protective position for ATGM systems and lightly armored vehicles. These positions become the initial building blocks for the defense.

The attacking enemy will target critical defensive elements. High on his list of priorities will be command and control facilities and vital logistics. In planning defenses, commanders should consider protective positions for each critical elements. Earth moving equipment can dig slot trenches or push up protective berms to reduce the effect of enemy fire significantly.

Maneuver commanders set up priorities for mobility, countermobility, and survivability. Working within these guidelines, engineers provide equipment and manpower to assist in the initial preparation and construction of improved positions. As time allows, these positions and supplementary ones will be developed.

Strongpoints. Strongpoints are heavily fortified battle positions-antitank nests which cannot be overrun quickly or bypassed easily by enemy tanks. Strongpoints are static defensive positions. They are built around an integrated series

of fighting positions, obstacles, and minefields. The enemy can reduce them only by using much time and overwhelming forces. Strongpoints are located on critical terrain features. They are usually designed to block chokepoints formed by terrain obstacles and blocking positions.

To be most effective, strongpoints must surprise the enemy. They must cause congestion and limit maneuver. Strongpoint forces may be extricated after their missions and before enemy follow-on forces arrive. In active nuclear environments, strongpoints must be well camouflaged and protected before the enemy arrives.

Establishing strongpoints is a major engineer mission. Doing so requires detailed coordination between the engineers and the maneuver units designated to occupy them. Because of the magnitude of the task, corps combat engineer units may support major strongpoint construction.

Camouflage. Camouflage is an individual and unit responsibility. Engineers may support camouflage operations when the tactical units need assistance. Terrain analysis teams can provide information on cover and concealment for the area of operations. During defensive engineer operations, camouflage of individuals, equipment, and work sites must be accomplished. Proper siting and camouflage are the best means of keeping protective positions from being detected.

The best way to evaluate prepared positions, if time and the enemy situation will allow, is to view them from the enemy's vantage point. Positions should blend into the surrounding terrain pattern. They should be hidden in buildings or in the wood line, for example, in order to foil sensors. Existing trails

or roads should be used and vehicle tracks erased when leaving the road. Moving cross-country, tactical vehicles leave tracks that betray positions.

Camouflage nets, screens, or natural material can improve survivability. Natural camouflage or existing foliage must be properly maintained. Light and noise discipline, especially at night, must be practiced and enforced.

Deception. Deception misleads the enemy by manipulating, distorting, or falsifying information in order to cause him to react against his own interests. Units can simulate defensive position to deceive the enemy about the true locations of friendly forces and their dispositions. Deception facilitates tactical surprise.

Deception methods are many and varied. At the tactical level, simple phony minefields or weapons positions may cause the enemy to slow or react. This may provide a valuable tactical opportunity for the defenders. At higher levels, deceptions could include larger and complex facilities such as dummy tank farms, supply depots, and marshalling areas using expedient, prefabricated, or actual hardware. Time and enemy surveillance techniques will determine the method or materials for deception operations.

Engineers normally support or participate in deception operations for major units. They do not usually conduct deception operations by themselves but with other units. Typical engineer operations could be:

- To provide assistance in camouflage and concealment.
- To provide planning assistance for dummy positions and decoys.
- To portray larger or different tactical units.
- To construct dummy positions and decoys.

5. Summary.

This completes the discussions on the capabilities of combat engineer elements. We discussed mobility, countermobility, survivability and general engineering support that is provided by combat engineer elements. We will now discuss planning and coordinating for passage of lines.

PART B - PLAN AND COORDINATE FOR PASSAGE OF LINES

1. General.

Your company will often have to pass through another friendly unit's lines in order to conduct an assigned mission. Likewise, the company may have to relieve another company in place and assume the relieved company's mission. These passages must be thoroughly coordinated and controlled.

2. Passage of Lines, Rifle Company.

A passage of lines is an operation in which one unit moves either forward or rearward through positions held by another friendly unit. During a passage of lines, both units are temporarily concentrated in a small area and are extremely vulnerable. For such passage to occur with the least disruption of either

unit's tactical mission, the commanders must thoroughly coordinate troop movement, troop positions, combat support, and combat service support.

Planning. Upon receipt of an order to conduct passage of lines, the company commander of the passing company initiates his troop leading procedure. He must contact the stationary company commander and arrange for a specific time and place for coordinating the passage. If possible, the company commanders, platoon leaders, and fire support team (FIST) chiefs of the two companies should attend the coordination meeting. In some situations (in a delay, for example), commander of the passing company may have his executive officer (XO) and a quartermaster party conduct the coordination.

The commanders of the two companies must plan for and coordinate:

- Exchange of enemy information.
- Reconnaissance of the area.
- Passing company's scheme of maneuver.
- Exchange of communications information.
- Recognition signals to be used.
- Use of guides and traffic control.
- Security measures to be used during the passage.
- Control measures to be used during the passage.
- Fire support.
- Transfer of responsibility/actions on enemy contact.
- Combat service support.

After the coordination meeting, the commanders and platoon leaders should conduct a reconnaissance of the area, return to their units, complete their plans, and issue orders as appropriate.

Control Measures. The control measures ([Figure 2-7](#)) used during a passage of lines normally include:

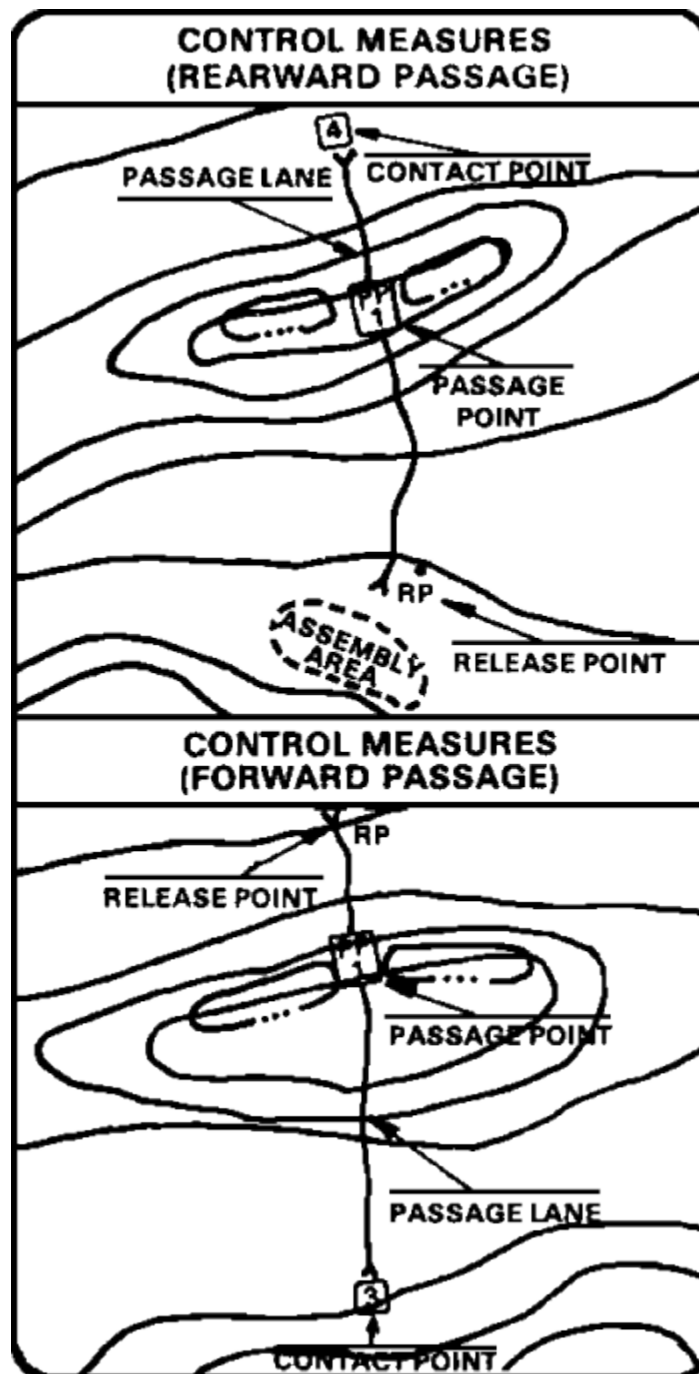


Figure 2-7. Control Measures.

- **Contact point.** The stationary company commander designates contact points where the two companies will make initial contact. This will normally be a primary and an alternate contact point. However, he may decide to use multiple contact points (one per platoon).
- **Passage lanes.** The stationary company commander normally assigns the passing company a primary and an alternate passage lane. In some situations, he may assign the passing company multiple passage lanes (one per platoon). The passing unit(s) must move within its assigned passage lane when passing through the stationary company. The lanes should pass through unoccupied areas between element of the stationary company or to the company's flank.

- **Passage points.** The stationary company commander designates a passage point in each passage lane to increase control. Each passing unit must pass through its assigned passage point. This allows the stationary company to monitor movements of friendly elements more closely and helps reduce the possibility of enemy infiltration.
- **Release points.** The stationary company commander designates a release point at the end of each passage lane. At each release point, the guide from the stationary company releases control of the passing unit to its respective leader.
- **Assembly area (rearward passage).** The stationary company commander designates an assembly area (for passing company to use) to the rear of his company. This is especially useful when there are multiple passage lanes.

Reconnaissance. After the coordination meeting, the commanders and leaders should conduct a reconnaissance of the area. They must determine:

- Passage lanes.
- Locations of the passage points.
- Locations of any obstacles.
- Locations of the release points.
- Location of the assembly area (for a rearward passage).
- Disposition and actions of the stationary company.
- Locations of contact points.
- Locations of the combat support and combat service support elements (command post, observation posts, trains, aid stations, mortars, tube-launched, optically tracked, wire-guided (TOW) missiles, and tanks).

Communications. The commanders should exchange callsigns, frequencies, codewords, pyrotechnic signals, and challenge and passwords. They must also plan for recognition signals that will be used to help identify the two units. This is especially important during limited visibility operations.

Guides and Traffic Control. The stationary company should provide guides to link up with the passing company at the contact point(s) and guide it through the passage lane(s). The passing company commander must tell the stationary company commander how many units, personnel, and vehicles will be passing through. If multiple lanes are used, this information should be broken down by lanes. This helps the stationary commander determine the number of guides and other traffic control measures needed. The passing company should have a representative at each passage point to identify and account for the personnel and vehicles passing through each point, and to notify the passing company commander when all personnel and vehicles have passed each point.

Security. The commanders must insure that their reconnaissance and other preparation activities do not reveal their plans to the enemy. They should select cover and concealed locations for the contact points, passage points, release points, and assembly areas. The passage lanes should also provide cover and concealment. When possible, the passage should be conducted during period of limited visibility. The stationary company's security activities (patrols and observation posts) should continue to operate as normal.

Passing Company's Scheme of Maneuver. The passing company commander should explain his company's scheme of maneuver to the stationary company commander. This may help the stationary company commander determine how he can best support the passing company.

Fire Support. The company commanders must coordinate their plans for fire support. The stationary company should support the passing company with direct and indirect fire until they are masked by the passing company. The FIST chiefs of both companies should exchange target lists and, if possible, collocate during the passage.

Transfer of Responsibility/Actions of Enemy Contact. The Responsibility for the area forward of the stationary company should be transferred to an agreed upon time. Normally, in a forward passage, the commander of the passing company assumes responsibility for the area at, or prior to, the time of passage or time of attack. This allows him to control all fire and maneuver in the area. If the responsibility for the area is transferred prior to the passage, the commander of the passing company normally assumes operational control of the security elements forward of the forward edge of the battle area belonging to the company being passed through. In the rearward passage, the responsibility for the area forward of the stationary company changes from the passing company commander to the stationary company commander when the passing company passes a specific location (designated phase line) or at a specified time. Coordination and control are facilitated if the boundaries of the two units coincide. In either a forward or a rearward passage, both commanders must coordinate their plans for reacting to enemy contact during the passage.

Combat Service Support. In a forward passage, the stationary company should provide combat service support to the passing company. This normally includes evacuating casualties, handling prisoners of war, recovery and evacuation of vehicles, and resupply of fuel and ammunition. In a rearward passage, and when feasible, the passing company should provide combat service support to the stationary company.

Conduct of the Passage. At the scheduled time, the passing company approaches the contact point(s) and exchanges recognition signals with the guide(s) from the stationary company. After the necessary information is changes, the guide(s) takes the passing company through the passage lane(s) and releases it at the release point(s). As the passing company reaches its passage point(s), its representative(s) contacts the representative(s) from the stationary company and exchanges the necessary information. Even though leaders are coordinating, movement should be continuous. Both company commanders and both FIST chiefs should be collocated at a point from which they can observe critical areas, make timely decisions, and issue necessary instructions.

3. Passage of Lines, Company Team.

As stated, a passage of lines is a task in which one unit passes forward or rearward through friendly positions. Because of the temporary concentration of both units at the same locations, the units are most vulnerable when conducting a passage of lines. For a passage to occur with the minimal disruption on the unit's tactical disposition, there must be a thorough coordination of movement, troop disposition, combat support (CS), and CSS. Both the stationary unit and passing unit commanders must plan the operation. Detailed reconnaissance and coordination are critical to a quick and smooth passage. Liaison personnel should be exchanged early and commanders should co-locate if possible.

Planning. Company team commanders prepare for this operation using the troop-leading procedures. The commanders must conduct reconnaissance and coordination to confirm:

- Disposition of the stationary force.
- Location of contact points where both units will make physical contact at a predetermined time. These points are established by the commander having authority over both units or, if they are not specified, by the stationary unit commander.
- Location of passage points and passage lanes. Passage lanes must provide clear and unobstructed routes through friendly positions and should be unoccupied or on the flanks of units in position. Multiple route should be used to reduce vulnerability with alternate routes always being planned. Passage lanes should be wide enough to permit maneuver if required. Guides for the passing unit must be coordinated. The number, type, and order of vehicles passing must be provided to the stationary unit.
- Location of attack position for forward passage or assembly area for rearward passage which provides cover and concealment. The position is located so as not to interfere with the stationary unit.
- Initial location for CD and CSS and the support provided by the stationary unit.
- Supporting direct and indirect fires.
- Time and method of transfer for responsibility or control of the zone or sector. The battle handover (phase) line or line of departure/line of contact (LD/LC) is the graphic control measure normally used to depict this item.
- Traffic control items. Guides for the passing unit will be coordinated. The passing unit will provide the stationary unit with the type, number, and order of vehicles passing through each point.
- Communication signals (CEOI information, pyrotechnic signals, recognition signals).

Conduct of Passage. When conducting a passage of lines, the company team commander is responsible for coordination, and will normally designate a liaison officer, such as the XO, to perform the coordination. The following minimum information should be exchanged:

- Designation of unit to pass.
- Mission of passing unit and tentative battle plan.

- Enemy situation.
- Friendly location.
- Fire support plan (direct and indirect),
- Overwatching fires.
- Fire control measures.
- Contact and coordination points.
- Patrol routes and OP locations.
- Passage points and lanes.
- Time of passage.
- Number and types of vehicles to pass.
- Vehicle identification.
- Obstacle types and locations.
- Assembly areas/attack positions.
- CS and CSS to be provided and locations of the assets.
- Routes and priority of routes.
- CEOI information.
- Long and short range recognition signals.
- Battle handover line.
- Contaminated areas.

After the coordination is made and the unit begins the passage, guides will pick up the passing unit at the contact point or the passage point. The guides will normally come from the infantry or from elements in the combat trains. The guides will exchange recognition signals with the passing unit. The guides will then move the passing unit through or around the stationary unit without halting. The guides leave the unit at the release point or after the unit has passed the last friendly unit. On a rearward passage, liaison personnel normally meet at the passage point to verify friendly vehicles and perform any additional coordination required.

4. Summary.

This concludes the discussion on planning and coordinating for passage of lines. We discussed tactical procedures for a rifle company and a company team. Procedures discussed including planning, control measures, communications, fire support and security. Next we will discuss developing a company patrolling plan.

PART C - DEVELOP A COMPANY PATROLLING PLAN

1. General.

A patrol is a detachment sent out by a larger unit to conduct a combat or reconnaissance operation. The operation itself is also called a patrol. The mission to conduct a patrol may be given to a fire team, squad, platoon, or company. The leader of the detachment conducting a patrol is referred to as the patrol leader.

You may be involved in patrolling in one of three ways. You may be the leader of a company-size patrol, provide small patrols from your company (as directed by battalion), or send out patrols to support your company's operations.

When preparing for a company-size patrol, you (patrol leader) are given a mission by the battalion commander. You obtain enemy information from the S2, conduct troop leading procedure, conduct necessary coordination, and develop a plan for the conduct of the operation.

When providing a small patrol for a battalion mission, you insure that the patrol is well-prepared and equipped for the mission. You assist the patrol leader with preparation, coordination, and final inspections before the patrol departs.

When you plan to use a patrol to support a company operation, you decide on its mission, organization, time(s) and place(s) for departure and return, and (possibly) routes. You also assist in planning fire support, logistical support, and communications.

2. Categories of Patrols.

The planned action at the objective determines the patrol's category. There are two categories of patrols:

- A reconnaissance (area or zone) patrol collects information or confirms or disproves the accuracy of information previously gained.
- A combat (ambush, raid, or security) patrol provides security and harasses, destroys, or captures enemy troops, equipment, and installations. A combat patrol also collects and reports information, whether related to its mission or not.

Regardless of the category of the patrol, there are four key principles to successful patrolling. These are:

- Detailed planning.
- Thorough reconnaissance.
- Positive control.
- All-round security.

3. Organizing for a Patrol.

You, as the patrol leader decide what elements and teams are needed for your patrol, select men or units for these elements and teams, and decide what weapons and equipment are needed. You should, however, use your unit's normal organization (squads and platoons) and chain of command (squad and platoon leaders) as much as possible to meet these needs. For example, a combat patrol may be organized like this: the company headquarters is the patrol headquarters; the 1st platoon is the assault element; the 2d platoon is the security element; and the 3d platoon and weapons platoon make up the support element.

General organization. A patrol generally consists of a patrol headquarters and the elements needed for the mission.

Patrol headquarters. The headquarters (HQ) of a company-size patrol normally consists of the same number of men as a regular company headquarters. However, regardless of a patrol's size, its leader tailors the headquarters to meet mission needs. The patrol headquarters has the same responsibilities as any other command element.

- **Elements.**

Reconnaissance patrol. In an area reconnaissance (recon), a patrol has a reconnaissance element and a security element ([Figure 2-8](#)).

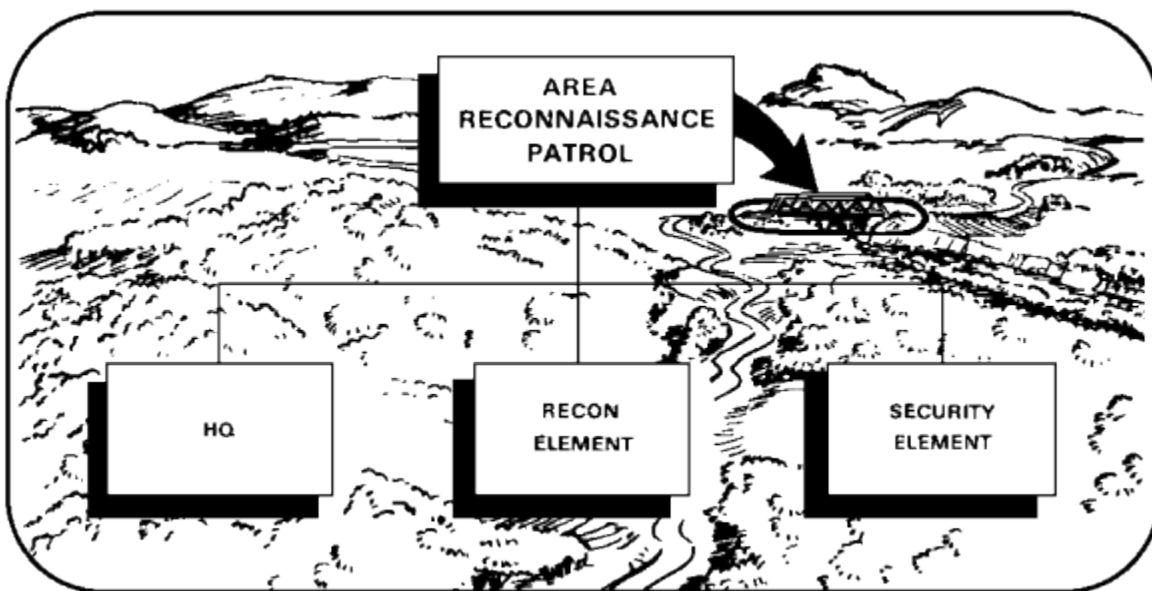


Figure 2-8. Area Reconnaissance Patrol.

In a zone reconnaissance, a patrol has several reconnaissance elements ([Figure 2-9](#)). Each one provides its own security.

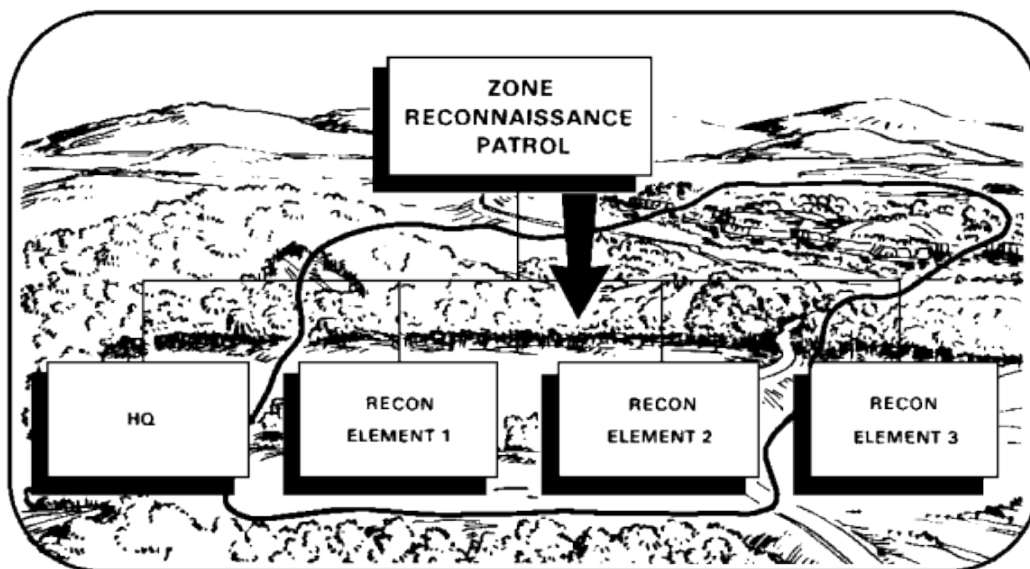


Figure 2-9. Zone Reconnaissance Patrol.

Combat patrol. A combat patrol normally has an assault element, a security element, and a support element ([Figure 2-10](#)). At times, the support element may be omitted by combining it with the assault element.

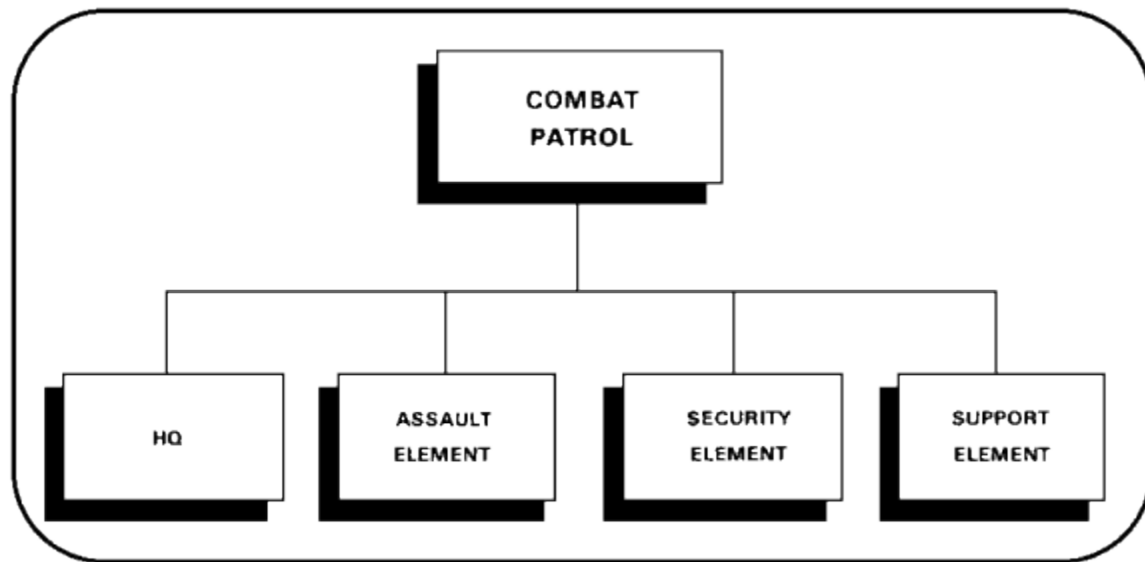


Figure 2-10. Combat Patrol.

Special Organization. Each element of a patrol may be further organized into the teams needed to perform various tasks.

Reconnaissance patrol elements are organized into the teams needed to perform various tasks. Reconnaissance elements may be organized into several reconnaissance teams (in an area reconnaissance ([Figure 2-11](#)) or into reconnaissance and security (R&S) teams (in a zone reconnaissance ([Figure 2-11](#))). R&S teams provide their own security while reconnoitering. Security elements are organized into the number of security teams needed to secure the objective area.

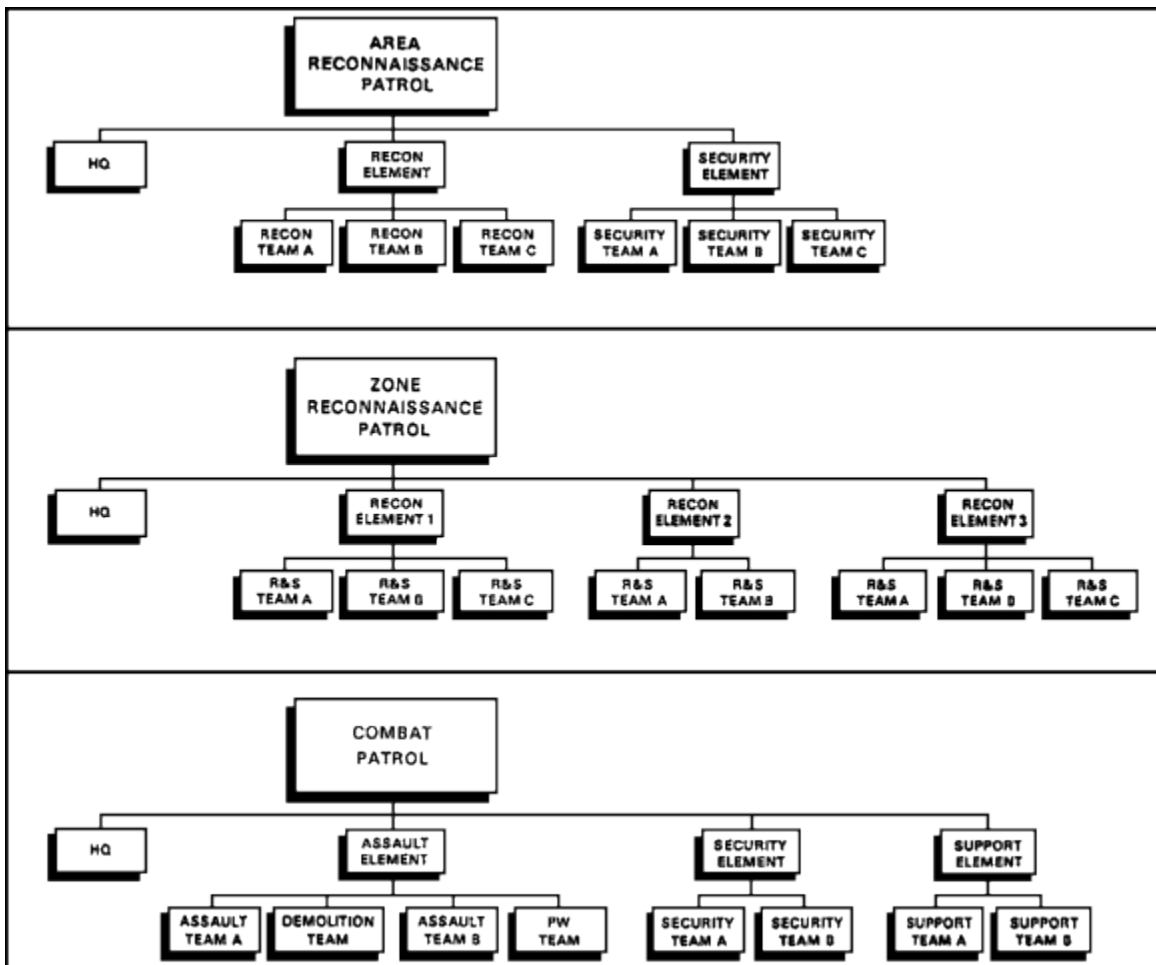


Figure 2-11. Special Organization of Reconnaissance and Combat Patrols.

Combat patrol elements are also organized into the teams needed for various tasks (assault, security, support, and special purpose) ([Figure 2-11](#)).

Two or more assault teams are organized when all of the assault element cannot be directly controlled by the assault element leader. This may be the case when the objective is to be assaulted from more than one location.

Security teams are organized as needed to secure the objective area.

Two or more support teams are organized when all of the weapons of the support element cannot be directly controlled by the support element leader. This may be the case when there are many supporting weapons or they are too far apart for direct control by the element leader.

Special purpose teams may also be organized for missions involving the use of scout dogs, demolitions, litters for wounded, and handling prisoners of war (PW).

4. Selecting Men, Weapons and Equipment.

Men. Patrol members usually come from your company, except when the controlling headquarters provides special troops, such as demolition specialists, interpreters, guides, and scout dog teams. Squad and platoon integrity should be maintained when possible. Men whose physical condition may interfere

with the mission are not taken. For example, a man with a cold may endanger security by coughing; a man with foot trouble may slow the patrol. You select only the men needed for the mission.

Weapons. The weapons and ammunition selected are based on what is needed to do the job. The difficulty of carrying certain weapons, because of the bulk or weight, must be considered. The value of the weapon (in accomplishing the mission) is measured against the difficulty of carrying it.

Equipment. You select equipment that aids control, has common use, is used in the objective area, and is used enroute.

Aiding control. This may include whistles, flares, radios, flashlights, and luminous tape.

Common use. This is equipment normally carried on all patrols, or that which is common to all patrol members. It may include the uniform to be worn and individual equipment to be carried. Unit SOP prescribing routine uniform and equipment saves time in planning and preparing.

Use in the objective area. This may include such items as explosives, binoculars, ropes to bind prisoners, and flashlights.

Use enroute. Equipment to help reach and return from the objective may include maps, binoculars, flashlights, boats, stream-crossing equipment, compasses, and wire cutters.

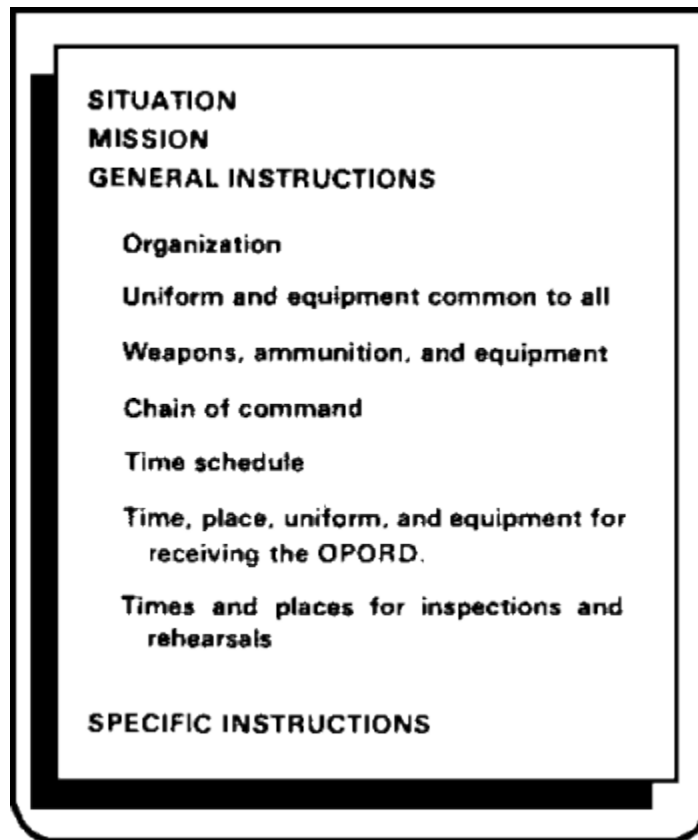
You must also determine the amount of food and water needed for the operation. Only that needed should be carried.

5. Preparation for a Patrol.

When given an order to lead a patrol, you start your troop leading procedure. Some key steps in your preparation are discussed in the following paragraphs.

6. Issue a Warning Order.

The warning order is issued to all element leaders ([Figure 2-12](#)). Its format follows:

A diagram showing the format of a Warning Order. It consists of a large outer rectangle with a thick black border. Inside this is a smaller rectangle with a thin black border. The text is organized as follows: 'SITUATION' is at the top left. 'MISSION' is below it. 'GENERAL INSTRUCTIONS' is below that. Under 'GENERAL INSTRUCTIONS' are five items: 'Organization', 'Uniform and equipment common to all', 'Weapons, ammunition, and equipment', 'Chain of command', and 'Time schedule'. Below these is a line of text: 'Time, place, uniform, and equipment for receiving the OPORD.' This is followed by 'Times and places for inspections and rehearsals'. At the bottom of the inner rectangle is 'SPECIFIC INSTRUCTIONS'.

SITUATION
MISSION
GENERAL INSTRUCTIONS

Organization

Uniform and equipment common to all

Weapons, ammunition, and equipment

Chain of command

Time schedule

Time, place, uniform, and equipment for receiving the OPORD.

Times and places for inspections and rehearsals

SPECIFIC INSTRUCTIONS

Figure 2-12. Warning Order Format.

- **Situation.** This includes only the information the subordinate leaders need in order to prepare for the patrol. The complete situation is given in the operation order (OPORD).
- **Mission.** This is a brief and clear statement of what the patrol must accomplish. It must tell who, what, when, where, and why.
- **General Instructions.**
 - Organization. This explains the general and special organizations. Men or units are assigned to either the headquarters or to one of the elements or teams.
 - Uniform and equipment common to all. This includes the clothing, personal equipment, rations, and water to be carried; camouflage measures to be taken; and the means of identification the men and units are to use.
 - Weapons, ammunition, and equipment. This includes the weapons, ammunition, and equipment needed for the patrol, and which elements carry them.
 - Chain of command. You assign each element leader a place in the chain of command. Each element leader then sets up a chain of command within his element.
 - Time schedule. You prepare a time schedule for all upcoming actions. You use the reverse planning sequence to make this schedule. The time schedule helps you and the element leaders make the best use of their time in planning and preparing for the mission ([Figure 2-13](#)).

0200 -	- RETURN FRIENDLY AREA
2330 - 0200 -	MOVEMENT EN ROUTE
2300 - 2330 -	ACCOMPLISH MISSION, REORGANIZE
2230 - 2300 -	LEADERS' RECON
2000 - 2230 -	MOVEMENT EN ROUTE
2000 -	- DEPART FRIENDLY AREA
1945 - 2000 -	MOVEMENT TO DEPARTURE AREA
1930 - 1945 -	FINAL INSPECTION
1845 - 1930 -	NIGHT REHEARSALS
1800 - 1845 -	DAY REHEARSALS
1745 - 1800 -	INSPECTION
1700 - 1745 -	SUPPER MEAL
1615 - 1700 -	SUBUNIT PLANNING AND PREPARATION
1445 - 1615 -	ISSUE OPERATION ORDER
1400 - 1445 -	COMPLETE DETAILED PLANS
1315 - 1400 -	CONDUCT RECONNAISSANCE
1300 - 1315 -	ISSUE WARNING ORDER

Figure 2-13. Sample Patrol Time Schedule.

- Time, place, uniform, and equipment for receiving the OPORD. You tell your subordinate leaders when and where the order will be given, what uniform to wear, and what equipment to bring.
- Times and places for inspections and rehearsals.

● **Specific Instructions.** Element and/or team leaders are instructed in the following:

Getting, checking, and distributing:

- weapons,
- ammunition,
- equipment,
- rations, and
- water.

Preparing their men for the patrol.

Reconnoitering, coordinating, inspecting and rehearsing. Instructions are given to special purpose teams and key men for such things as preparing explosives, checking radios, and making a map study (point and compass men).

7. Conduct Necessary Coordination.

Coordination is continuous throughout planning and preparation. You should coordinate those things you can before leaving the place where you receive the mission. The following are examples of things which you must coordinate. (You should prepare and carry a coordination checklist with you.)

NOTE: Some items may be coordinated with more than one staff section.

● S2:

- Changes in the enemy situation.
- Special equipment requirements.

● S3:

- Changes in the friendly situation.
- Route selection; landing zone and/or pickup zone (LZ/PZ) selection.
- Linkup procedure.
- Transportation.
- Resupply (in conjunction with S4).
- Signal plan (callsigns, frequencies, codewords, pyrotechnics, and challenges and passwords to be used beyond the forward edge of the battle area [FEBA]).
- Departure and reentry through friendly forward units.
- Other patrols in area.
- Attachment of specialized troops (for example, a demolition team, a scout dog team, interpreters).
- Rehearsal areas:
 - Terrain similar to the objective site.
 - Security of the area.
 - Use of blanks, live ammunition, and pyrotechnics.
 - Buildings or fortifications (possibly mockups) available.
 - Time the area is available.
 - Transport to and from the area.

● Fire Support Officer (FSO):

NOTE: The fire support team (FIST) chief can do this.

- Mission and objective.
- Routes to and from the objective (including alternate routes).

- Time of departure and expected time of return.
- Fire support needed, to include targets en route to and from the objective and fire on and near the objective.
- Communications (callsigns, primary and alternate frequencies, emergency signals, and codewords).

● **Friendly Forward Unit.** You must coordinate with the friendly forward unit through which the patrol will pass. If the time and place have not been set for this coordination, you make the necessary arrangements when you coordinate with the S3. If possible, you should coordinate directly with the company commander of the forward unit.

You give the forward unit commander:

- Identification of the patrol.
- Size of the patrol.
- Time(s) of departure and return.
- Patrol's area of operation (if it falls within the forward unit's area of operation).

Forward unit commander gives the patrol leader:

- Locations of detrucking point.
- Initial rally point, departure point, and reentry point.
- Information on terrain.
- Known or suspected enemy positions.
- Likely enemy ambush sites.
- Latest enemy activity.
- Information on friendly positions.
- Obstacle locations.
- Indirect fire planned in the area.
- Support the unit can furnish (for example, fire support, litter teams, guides, communications, reaction units).
- Signal plan, to include the signals and means of communications to be used during reentry.
- Procedure to be used by the patrol and guides during departure and reentry.

● **Adjacent Patrol.** The patrol leader should check with other patrol leaders who will be patrolling in the same or an adjacent area and exchange the following information:

- Identification of the patrols.

- Missions.
- Planned times and points for departures and reentries.
- Routes to be used.
- Plans for fire support.
- Signals to be used.
- Any information the patrol leaders may have about the enemy.

8. Conduct Reconnaissance.

You must make a map, ground, or an aerial reconnaissance (more than one method if possible) prior to completing your plan.

Some of the things you look for are:

- routes to and from the objective area,
- danger areas,
- places along the routes that may cause difficulty in movement and/or require special equipment,
- locations for rally points,
- location for the objective rally point,
- positions for patrol elements in the objective area,
- locations for patrol bases,
- possible enemy positions, and
- LZs and PZs.

9. Complete the Plan.

After the warning order has been given, subordinate leaders prepare their men and equipment for the mission. You complete your plan. You first assign tasks to elements, teams, and key men. Then you plan other phases of the patrol.

Tasks in the Objective Area. Tasks to be accomplished in the objective area are identified and assigned to the appropriate team or element. You develop a general plan as to how these tasks will be performed. You do this to insure that these tasks are accomplished in accordance with the overall plan.

Other Tasks. Tasks are planned and assigned which will help the patrol reach the objective and return; for example, navigation, security during movement and halts, actions at danger areas, actions on enemy contact, steam crossing, and small-boat operations.

Time of Departure and Time of Return. These times are based on the time needed to:

- reach the objective. This is determined by considering the distance, terrain, expected speed of movement, friendly and enemy situations, and (if applicable) the time at or by which the mission must be accomplished.
- accomplish tasks in the objective area. This includes your reconnaissance and movement of elements and teams into position, as well as the accomplishment of the patrol's mission.
- return to a friendly area. This may be difficult to determine because casualties, prisoners, or captured equipment may slow the patrol. The use of a different return route may change the amount of time required to get back to friendly lines.

Primary and Alternate Routes. You select a primary route to and from the objective. The return route should be different from the route to the objective. You also pick an alternate route which may be used either to or from the objective. The alternate route is used if the patrol makes contact with the enemy on the primary route. It may also be used if you know or suspect that the patrol has been detected ([Figure 2-14](#)).

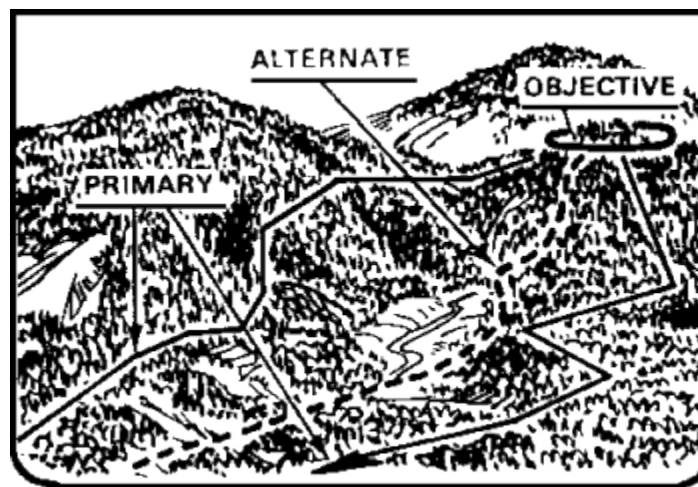


Figure 2-14. Primary and Alternate Routes.

You should divide your routes into legs. Each leg should start, if feasible, at a point which can be recognized on the ground. A pace count and azimuth are used between each point. When it is not possible to start and stop legs at recognizable points, a continuous pace count and azimuth should be used ([Figure 2-15](#)).

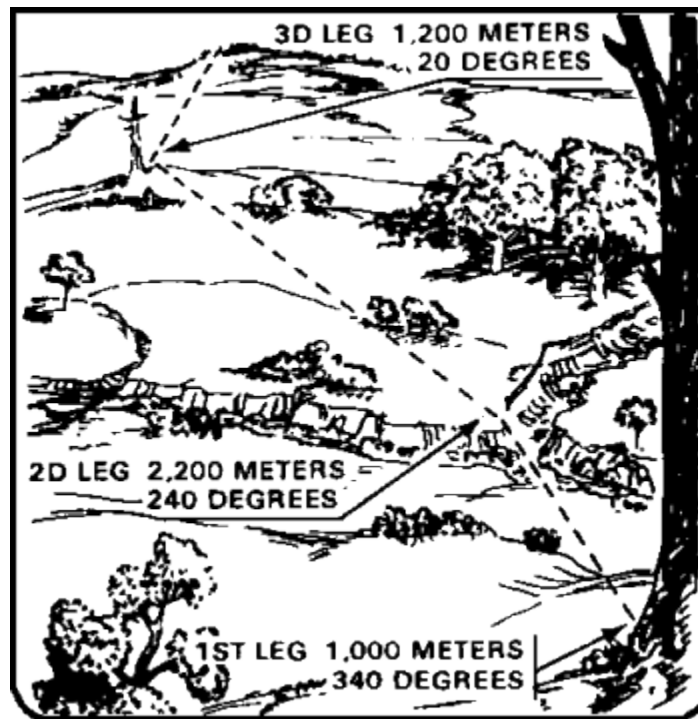


Figure 2-15. Route Divided into Legs.

Rally Points. A rally point is a place where the patrol can:

- reassemble and reorganize if dispersed during movement,
- temporarily halt to reorganize and prepare prior to actions at an objective,
- temporarily halt to prepare to depart from friendly lines, and
- temporarily halt to prepare to reenter friendly lines.

You select rally points either by a map study before the patrol or by terrain study during the patrol. Those selected before the patrol are tentative until confirmed on the ground.

You look for places that:

- are large enough for the patrol to assemble in,
- are easily recognized,
- have cover and concealment,
- are defensible for a short time, and
- are away from normal routes of troop movement.

You must select:

- an initial rally point on the friendly side of a friendly forward unit's lines,
- an objective rally point near the objective,
- en route rally points for use during movement to and from the objective,

- rally points on both the near and far sides of danger areas, and
- a reentry rally point on the enemy side of a forward unit's lines.

An initial rally point is where the patrol rallies if dispersed before departing friendly lines or before reaching the first rally point enroute. It is located within friendly lines.

An enroute rally point is where the patrol rallies if dispersed enroute to or from its objective. There may be several enroute rally points. They are located between friendly lines and an objective and are along the patrol's route.

An objective rally point (ORP) is where the patrol halts to prepare for actions at its objective. It is also where the patrol returns to after its action at the objective. It must be located near the patrol's objective (but there is no set distance between it and the objective). However, it should be far enough from the objective so that the patrol's activities in it will not be detected by the enemy. The ORP must also be far enough from the objective so that if the patrol is forced off the objective it will be able to break contact with the enemy prior to reaching the ORP.

A reentry rally point is where the patrol halts to prepare to reenter friendly lines. It is located just short of friendly lines and out of sight and sound of friendly observation posts.

Rehearsals and Inspections. These are vital to proper preparation and must be done for each patrol. This is true even when the unit is experienced in patrolling. You must determine what needs rehearsing and where it will be done. The element leaders must inspect their men, and if possible, should inspect the entire patrol.

Rations. You must decide how many rations and what type the men should carry. Only those rations needed are carried.

Weapons and Ammunition. You normally prescribe, in the warning order, the amounts and types of weapons and ammunition to be carried. If changes to the warning order are now necessary, you explain them to your element leaders.

Uniform and Equipment. You normally prescribe in the warning order, the uniform to be worn and the equipment to be carried. If changes to the warning order are now necessary, you explain these to your element leaders.

Signals. The signals to be used on the patrol must be planned and rehearsed. Signals may be needed to lift or shift supporting fire, to start an assault, to order withdrawal from the objective, and to stop and start movement of the patrol. Visual and audible signals such as arm-and-hand signals, flares, voices, whistles, radios, and infrared equipment may be used.

Communications with Higher Headquarters. The plan must include radio callsigns, primary and alternate frequencies, when and what to report, and codes.

Challenge and Password. The challenge and password from the communications-electronics operation instructions should not be used beyond the FEBA. You should devise your own challenge and password system to be used beyond the FEBA. An example of this is the odd-number system. Any odd number can be used. For example, if you specify 11 as the odd number, the challenge could be any

number between 1 and 10. The password would be the number which, when added to the challenge, equals 11 (for example, challenge 8, password 3).

Chain of Command. You normally designate a chain of command for the patrol while issuing the warning order. If that chain of command changes, then you designate a new one.

Location of Leader. You must plan in advance where you will be during all phases of the patrol - during movement, at danger areas, and at the objective. You should always be where you can best control your patrol during each phase of the mission.

10. Issue Operation Order.

You issue your order using the format ([Figure 2-16](#)). You should use a sketch or terrain model to illustrate the plan.

1 SITUATION

a Enemy forces

Identification

Location.

Activity

Weather

Terrain

b Friendly forces.

Mission of next higher unit.

Location and planned actions of units on right and left.

Mission and routes of other (adjacent) patrols.

Fire support available.

c. Attachments and detachments. (Effective times.)

2 MISSION.

3 EXECUTION

a. Concept of operation (scheme of maneuver and fire support plan).

b Subunit tasks (elements 'teams' men).

c. Coordinating instructions.

(1) Time of departure and return.

(2) Movement techniques and order of movement.

(3) Route (primary and alternate).

(4) Departure and reentry of lines

(5) Rally points and action at rally points.

(6) Action at danger areas.

(7) Action on enemy contact.

(8) Action at the objective.

(9) Fire support (if not already covered).

(10) Intelligence requirements.

(11) Other tasks (e.g., stream crossings, boat operations).

4. SERVICE SUPPORT.

a. Rations and water.

b. Arms and ammunition.

c. Uniform and equipment.

d. Method of handling wounded, PWs, and captured equipment.

e. Transportation.

5. COMMAND AND SIGNAL.

a. Signal.

(1) Arm-and-hand and other signals, codes, and radio callsigns and frequencies to use within the patrol.

(2) Reports, codes, and radio frequencies and callsigns to use with higher headquarters.

(3) Challenge and password.

b. Command.

(1) Chain of command.

(2) Location of patrol leader during movement and at the objective.

Figure 2-16. OPORD Format.

11. Inspect, Rehearse, Supervise.

Inspection and rehearsals are conducted regardless of the unit's experience. The extent depends on the time available, the complexity of the patrol, and the experience of the unit.

Inspections must be conducted by the element leaders, and time permitting, by you. Inspections reveal the physical and mental readiness of the men. Inspections before rehearsals insure completeness and correctness of uniform and equipment. Men should be questioned to see that each one knows:

- the plan;
- what he is to do and when he is to do it;
- what others are to do; and
- challenges and passwords, signals, codes, callsigns, frequencies, and reporting times.

An inspection after the final rehearsal and just before departure helps insure that all equipment is still working, that nothing is being left behind, that previously found deficiencies are corrected, and that the unit is ready.

Rehearsals help insure that the patrol members are proficient in performing their tasks. They let you check plans, make any changes needed, and verify the suitability of equipment. It is through well-directed rehearsals that men become familiar with the things they will do when on the patrol.

If the patrol is to be conducted during periods of limited visibility, it is good to have both day and night rehearsals. Terrain like that over which the patrol will operate should be used. All actions should be rehearsed if time permits. When time is short, only the critical actions are rehearsed. Actions in the objective area are the most critical and should always be rehearsed.

A good way to rehearse is for you to first walk and/or talk the element leaders, and other key members, through each critical task. Afterward, you have the element leaders rehearse their elements on those tasks. Then, the whole patrol rehearses together. Although this is time consuming, it helps insure that tasks are performed according to your plan.

Supervision is continuous by all leaders. To help soldiers during preparations, inspections rehearsals, and during the patrol, you may direct the use of the buddy system. Buddies look out for each other and see that orders are followed. Once established, buddy teams should not be split unless it is required by the situation.

12. Summary.

This concludes the discussions on developing a company patrolling plan. We covered the categories of patrols, organizing a patrol preparation for a patrol and complete the patrol plan. Next we will cover conduct of the defense of an infantry company.

PART D - CONDUCT THE DEFENSE OF AN INFANTRY COMPANY

1. General.

Before occupying a defensive position, you, as the company commander normally halt the company short of the position, establish local security, and assemble your platoon leaders for a reconnaissance of the position.

You may first, however, reconnoiter the position without your platoon leaders and then conduct another reconnaissance with them. During the reconnaissance, you look for:

- enemy avenues of approach;
- primary, alternate, and supplementary positions for platoons and weapons;
- deadspace in front of the positions; and
- locations for the company CP, OP, trains, aid station, and PW collection point.

After the reconnaissance, you and the platoon leaders return to the company and continue your preparation. Once all plans and preparations are complete, the company moves forward to occupy its position.

At a predesignated place, you release control of the platoons to the platoon leaders. The platoon leaders move their platoons forward and occupy their positions. The platoon leaders follow the priority of work established by you in preparing their defensive position.

2. Defensive Battle.

The defensive battle starts when the company sees and fires at the enemy. As the enemy advances, he is brought under an increasing volume of indirect fire initially and then direct and indirect fire. Men in OPs report information about the enemy, and the FOs call for and adjust indirect fire. When the enemy advance threatens the OPS, the soldiers are withdrawn.

All company weapons fire at appropriate targets as they come within range and in accordance with the defense plan. Leaders and FOs are alert to direct and distribute fire where it is needed and to avoid wasting ammunition.

The rate of fire increases as the enemy approaches. If tanks and infantry are attacking, fire is placed to force tanks to button up, and to separate foot troops from the tanks.

If attacking formations are not broken up forward of the company's position, the enemy will assault. You then call for your FPF. Machineguns that have a final protective line (FPL) fire on that FPL. Those that do not have an FPL fire along their principal direction of fire (PDF). Mortars and artillery fire their FPFs. All other weapons fire during the firing of the FPF. They fire until the assault has been halted. A prearranged signal, such as a flare, is used to stop the firing when the assault has been halted. FPF may be repeated as necessary. Since FPF expends a lot of ammunition, it should not be called for except to stop an enemy assault from closing on the position. If the enemy gets through the FPF, he is repelled by close combat. If the company is threatened from the flanks or rear, you may move platoons to fight

from supplementary positions. If platoons and squads are forced from their primary positions, they move to their alternate positions.

Throughout the conduct of the defense, the platoon leaders keep you informed of their situation. You must keep the battalion commander informed of the company's situation.

If the enemy is repelled, OPs are established again and patrols may be sent forward to maintain enemy contact. Indirect fire is called on areas where the enemy is likely to regroup. The company reorganizes and prepares for another enemy attack.

To prepare for the next attack, you insure that the squad and platoon leaders accomplish the following:

- **Replace key men lost during the fight.**
- **Reestablish security.** If men withdrew from the OPs to their fighting positions, they return to their OPs. If some did not get back to the platoon position, leaders check their status and replace those who became casualties. As soon as feasible, the unit reverts to its security (sleep/alert) system.
- **Treat or evacuate casualties.** Casualties are treated as far forward as practical. Those who can, return to their positions. Other are evacuated through medical channels. The dead are reported and the bodies are evacuated.
- **Redistribute ammunition and supplies.** Squad leaders distribute remaining ammunition and supplies equally among their men. Ammunition is taken from casualties and distributed. Platoon leaders issue any stockpiled ammunition to their squads, take a quick inventory of other needs, and request resupply (to include barrier materials and medical supplies)
- **Relocate fighting positions and weapon positions, as necessary.** During the assault, the enemy may have pinpointed some of the positions. If a platoon leader thinks certain positions are in danger, he may reposition those men and weapons which he feels are vulnerable or which do not have good observation and fields of fire. Leaders recheck sectors of fire and see that they remain covered. Positions are adjusted to maintain mutual support.
- **Reestablish communications.** If a phone line was cut during the attack, troops on each end of the line try to find and repair the break. If they cannot, they lay new wire. If a signal, such as a green star cluster, was used to initiate fire, you should consider changing that signal because the enemy may know what it means.
- **Replace camouflage.** Each soldier checks and, if necessary, replaces the camouflage on existing positions and camouflages new positions.
- **Replace obstacles, mines, and boobytraps if enemy troops are far enough away so it can be done safely.** This is risky, especially if the enemy has snipers. Troops may have to wait until visibility is poor to do this. Smoke may be used to create poor visibility.
- **Use snipers.** Before an attack is initiated and after it has been stopped, the defending unit may add to its security by using snipers. They should be allowed to move anywhere in the position.

They find and hit targets such as enemy reconnaissance parties, infiltration teams, leaders, obstacle-breaching teams, weapon crews, stragglers, and (enemy) snipers.

3. Counterattack.

If the enemy penetrates the forward positions and seizes or threatens to seize key terrain, all available fire is used in an attempt to destroy or eject him. If that fails, you must decide whether to try to block further penetration with his reserve or to counterattack. Normally, you do not counterattack unless the penetrating force has been stopped and is not being reinforced. This is because of the difficulty of counterattacking a moving force or a force being reinforced. In order to counterattack, the reserve, with its available fire support, must be strong enough to destroy or eject the enemy and restore the FEBA. The company may not have a reserve that strong. When the forward positions are penetrated by any enemy force, you usually have to use your reserve to block and hold the enemy in place.

When the company does counterattack, the reserve is given priority of fire from all available fire support. The reserve, avoiding friendly positions, makes a quick, decisive assault and clears the penetrated area. Any troops from the forward platoon who stay in the penetrated area fall under the control of the reserve when it comes into the penetrated area. After the counterattack, you may either order all or part of the reserve to occupy and defend the area regained, or order it to return to a rear position and resume the reserve mission. In that case, you would probably have a forward platoon reoccupy the penetrated areas.

When you decide to commit your reserve in a counterattack, you notify the battalion commander at once.

4. Limited Visibility.

During periods of limited visibility, you must increase security measures to insure that the company is not surprised by the enemy. You can do this by:

- Increasing the number of OPs and patrols.
- Occupying supplementary positions.
- Employing trip flares.
- Employing platoon early warning systems (PEWS).
- Employing night vision devices.
- Increasing the number of soldiers on security in each position.

At night you should plan for illumination (by artillery, mortars, hand-held flares, and grenade launchers) forward of the company's position to illuminate an attacking enemy force. If the company has an open flank, your plan for illumination must, however, be coordinated with adjacent units and approved by the battalion.

You must not fire illumination or allow your soldiers to initiate direct fire too soon. The enemy may employ small patrols to probe the company's defense to find a weak point in it, or to cause soldiers to reveal their positions by initiating fire. If enemy patrols are detected, grenade launchers, Claymore

mines, or indirect fire should be used to engage them. Direct fire weapons should not fire until the enemy attack. When the enemy does attack, you call for illumination and the company defends as in daylight.

This completes lesson two, you should now be familiar with the capabilities of combat engineer elements, how to plan and coordinate for passage of lines, develop a company patrolling plan, and conduct the defense of an infantry company. After reviewing all the material in this lesson, you should complete the practice exercise for lesson two. Answers and feedback for the question in the practice exercise will be provided to show you where further study is required.

Practice Exercise

Lesson 2

Instructions The following items will test your understanding of the material covered in this lesson. There is only one correct answer for each item. When you have completed the exercise, check your answers with the answer key that follows. If you answer any item incorrectly, review that part of the lesson which contains the portion involved.

Situation: You are the commander of an infantry company. The company is preparing for defensive operations and you are coordinating with combat engineer elements.

1. You are coordinating the employment of obstacles to reduce the enemy's ability to mass and maneuver. When selecting and placing obstacles suitably, the obstacles
 - ☐ A. must reinforce other obstacles and be integrated with the existing terrain.
 - B. must be constructed by the engineers.
 - C. should be given the same priority for emplacement all along the company's defensive frontage.
 - D. should be emplaced early as part of your mobility support operations.
2. Your unit will be occupying a temporary defensive position and you are deciding on the type minefield to emplace. You
 - A. must use a tactical minefield.
 - B. should use a point minefield.
 - C. emplace a protective minefield.
 - D. request engineer support and emplace a deliberate minefield.

Situation: You are the commander of an infantry company. The company is preparing for defensive operations, and you are coordinating for passage of lines.

3. You as the commander of the stationary company, are assigning primary and alternate passage lanes for the passing company. You
 - A. must assign one passage lane per platoon.
 - B. should conduct a ground reconnaissance of the passage lanes.
 - C. must ensure that the passing company commander designates a passage point in each passage lane.
 - D. select locations that pass through unoccupied areas between elements of your company or to its flank.

4. Your company team is preparing to conduct a forward passage of lines. After the coordination is made and the unit begins the passage.

- A. liaison personnel should be exchanged to ensure a quick and smooth passage.
- B. guides will pick up the passing unit at the contact point or passage point.
- C. liaison personnel meet at the passage point to verify friendly vehicles and perform any additional coordination required.
- D. guides will pick up the passing unit at the assembly area.

Situation: You are the commander of an infantry company. The company is preparing for defensive operations and you are developing a company patrolling plan.

5. Use Figure 1. The organization in the figure depicts

- A. an area reconnaissance patrol.
- B. a combat patrol.
- C. a zone reconnaissance patrol.
- D. a specially organized zone reconnaissance patrol.

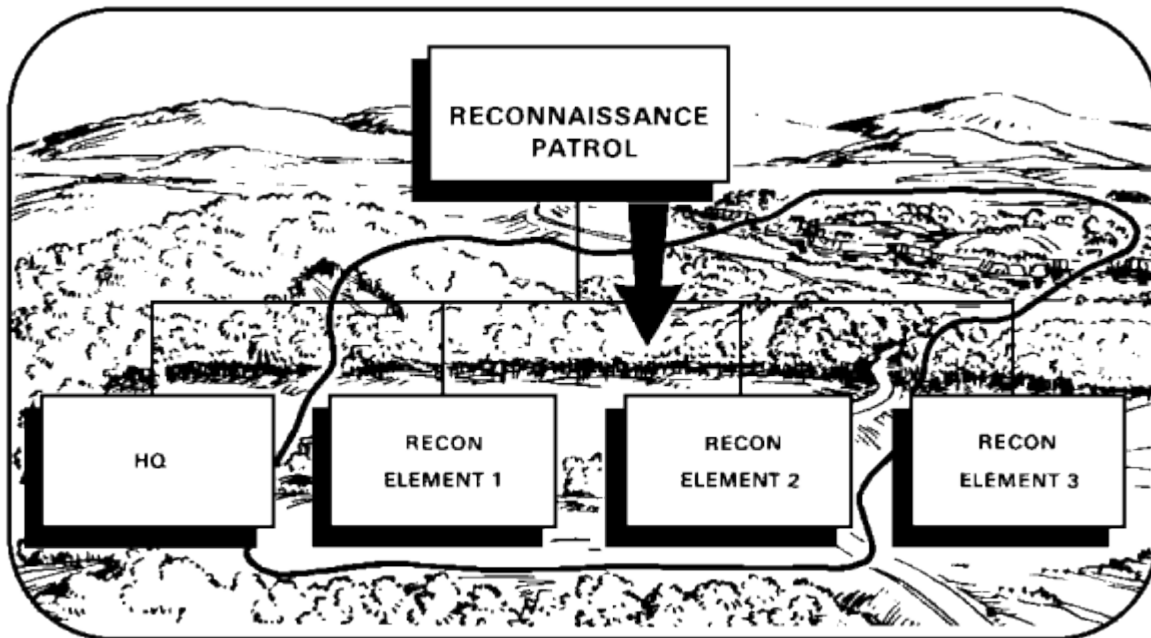


Figure 1. Patrol Organization.

6. You are selecting rally points for your patrol. You will use the ORP to prepare for actions at the objective. After actions at the objectives you return to the
- A. initial rally point.
 - B. ORP.
 - C. reentry rally point.
 - D. return rally point.

Situation: You are the commander of an infantry company which is presently conducting the defense.

7. Your defense plan includes the use of illumination to illuminate an attacking enemy force. During the night, the enemy employs small patrols to probe the company's defense. You
- A. engage the patrols with grenade launchers, Claymore mines, or indirect fire.
 - B. fire illumination to illuminate the attacking force.
 - C. fire illumination and engage the enemy with direct fire weapons.
 - D. call for illumination and the company defends as in daylight.
8. During an attack the enemy penetrated a forward position. The penetrating force has been stopped and you decided to use the reserve and counterattack. In this situation, the forward platoon troops in the penetrated area
- A. return to the rear and assume the reserve mission.
 - B. fall under the control of the reserve when it comes into the penetrated area.
 - C. assume responsibility for the reserve force and continue the counterattack.
 - D. move to their supplementary positions and continue to provide fire support to the reserve.